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The Joseph Bancroft Memorial Lecture.

PUERPERAL AND POST-ABORTION SEPSIS.[1]

By J. C. Windeyer, M.D., Ch.M. (Sydney),
Professor of Obstetrics, The University of Sydney.

We are gathered together to-night to commemorate one of our profession who by his outstanding originality of observation and research has made his name famous not only in Australia but throughout the civilized world. Joseph Bancroft will always be remembered for his work in connexion with filariasis, but his interests and observations covered a very wide field and only those of you who were his contemporaries in Queensland can have a correct idea as to his activities and his worth.

I wish to express my warmest thanks to the Council of the Queensland Branch of the British Medical Association for the great honour they have conferred upon me in asking me to deliver this, the second Joseph Bancroft Memorial Lecture.

Joseph Bancroft lived in the days when specialism in medical sciences had not developed as it has done during the past thirty years. He was an Honorary Surgeon to the Brisbane General Hospital and Visiting Surgeon to the Brisbane Lying-in Hospital which later became known as the Lady Bowen Hospital, but still most of his research work was in connexion with medical subjects. His only contribution to medical literature on obstetrics was a small one on missed labour, but from the notes entered up by him in the Visiting Surgeons' Book of the Brisbane Lying-in Hospital there is evidence of his keen interest in the patients under his care and of careful observation of their condition.

Dr. Elliot Smith has kindly made inquiries as to Dr. Bancroft's association with the Brisbane Lying-in Hospital. His name first appears in the Surgeons' Book in 1866; the hospital was founded in 1864.

The "Surgeons' Book" contains very interesting records of cases treated and from it I judge that the operations of internal version and craniotomy were much more frequently undertaken than at present. We can picture the difficulties with which medical men and incidentally the patients had to contend in those days, as the staff of the hospital consisted of the matron and one servant who acted in the capacity of cook, waitress and housemaid. It was also the duty of this maid of all work, when necessity arose, to go on foot for the doctor and he had to bring his own instruments as the hospital had none. Things have indeed changed since then in many ways.

A memorial lecture serves a double purpose. It causes us for a certain period, possibly only a short one, to conjure up the difficulties that the great men of the past had to contend with in their researches and to visualize how they must have stood out from their contemporaries. There is also no doubt that this pondering over the deeds of the great men of the past may sometimes stimulate the present holders of similar positions to make an attempt to do even a little more for the betterment of mankind.

[1] Delivered at Brisbane, August 5, 1927.

Vital Statistics on Puerperal and Post-abortion Sepsis.

I will not attempt to put before you a large array of vital statistics, as the mortality rates in connexion with childbirth have been brought before our notice very frequently in The Medical Journal of Australia during the last two or three years. There has also been a world wide discussion on the causes of maternal mortality during childbirth and the discussions have at times been quite acrimonious. The discussions have done good, however, not only in emphasizing the importance of antenatal supervision, which is in reality preventive obstetrics, but also in stimulating investigations into various unsolved problems of obstetrics. Some of these investigations have added considerably to our knowledge, even if they have failed to solve the main problem.

As in this address I am comparing the results of puerperal and post-abortion sepsis and the prophylaxis of these conditions I decided to include a table compiled from the vital statistics of New South Wales. The figures in Table I are from the two latest quinquennial periods, namely 1916-1920 and 1921-1925. The figures indicate that deaths under the heading of illegal operations which are most frequently the result of sepsis, are increasing in number, whereas the deaths under the heading of puerperal septicæmia are diminishing. I asked the New South Wales State Statistician if he could explain these figures and his reply was as follows:

> As the deaths from illegal operations, as tabulated, are the verdicts of inquests, the increase in the number of deaths may be due to the withholding of death certificates and the exercise of greater care and watchfulness on the part of the hospital authorities and medical practitioners in reporting suspicious cases.

That this is apparently the case is indicated by the fact that the combined totals for the two quinquennial periods are almost identical. The deaths under the heading of illegal operations increase as the deaths from puerperal septicæmia decrease. The mortality rate for the last period is slightly lower, as there were 12,503 more births.

This table indicates that post-abortion septicæmia is a factor to be reckoned with in any attempt to reduce maternal mortality due to childbirth.

The figures in the table prompted the analysis of the case records of the septic ward at The Royal Hospital for Women and this analysis and the deductions therefrom constitute the main part of my address to you to-night.

Royal Hospital for Women: Analysis of Case Records.

The statistics are compiled from the histories of 645 women suffering from puerperal and post-abortion sepsis who were admitted into the septic block at The Royal Hospital for Women.

Table I.—Analysis of Deaths in Quinquennial Periods in New South Wales.

Cause of Death.	Period 1916-1920 with 257,742 Total Births.		Period 1921-1925 with 270,245 Total Births.	
	Total Number of Deaths.	Average Annual Number of Deaths.	Total Number of Deaths.	Average Annual Number of Deaths.
Illegal operations	97	19·4	170	34·0
Puerperal Septicæmia	488	97·6	411	82·2
Total	585	117·0	581	116·2

The records are from a consecutive series (see Table II). I have omitted the records of cases of non-puerperal origin and also those of patients who were sent in with the diagnosis of septic abortion

Table II.—Analysis of 645 Cases of Sepsis.

Type of Sepsis.	Number of Puerperal Infections.	Number of Post-Abortion Infections.
Mild sepsis or sapræmia	..	258
Local uterine sepsis	43	91
Late post-abortion salpingitis	..	14
Infected perineal lacerations	12	..
Cæsarean section (infected wounds)	10	..
Femoral thrombo-phlebitis	16	3
Salpingitis and intraperitoneal pelvic abscess	8	52
Pelvic cellulitis	32	12
Generalized infection	49	45
Total	170	475

and in whom there was no elevation of temperature after admission to the hospital. Four hundred and seventy-five women in this series suffered from post-abortion sepsis and one hundred and seventy women from puerperal sepsis. There are several reasons why the abortion sepsis figures are so high: (i) The smaller private hospitals have no facilities for the care of septic patients. (ii) Medical men are glad to be rid of the worry and anxiety of attending upon a woman suffering from a septic abortion, as if death supervenes, a coroner's inquest may follow, which is, to say the least, unpleasant.

Of the 475 women suffering from post-abortion sepsis one was transferred from another ward of the hospital with sepsis commencing six days after abortion had been induced for pernicious vomiting of pregnancy and a few were transferred from the ward where the apparently non-septic incomplete abortions are treated; the rest were sent in by outside practitioners as suffering from septic complete, incomplete or inevitable abortions.

Amongst the 170 women suffering from puerperal sepsis, 117 were confined by outside medical practitioners, 50 were confined in the hospital and in three cases delivery had been attempted outside and was completed in the hospital. Some of the women who were confined in the hospital had been examined outside before admission. The fifty cases, of course, do not include our total hospital morbidity figures from sepsis, as those women who exhibit symptoms of mild sapræmia or of mild perineal wound infection or of femoral thrombo-phlebitis with but mild symptoms of sepsis are not transferred to the septic block, nor are the odd patients with peritonitis following Cæsarean section.

The cases have been classified in groups according to the part infected and in cases in which there has been a localized spread of infection to one or more places I have used the most prominent lesion for purposes of classification. Where possible I have for purposes of comparison put the corresponding puerperal and post-abortion groups in the same table.

The patients were under the care of nine honorary medical officers and about twenty resident medical officers were concerned with the carrying out of the treatment of these women. I mention this fact because I wish to define what I mean when I use the term curetting and more especially in regard to those women who were submitted to curettage in the hospital.

In a large number of the cases of patients in hospital digital removal of the products of conception is performed and a large blunt curette is used merely to detach masses which are not easily separated by the finger, and no attempt is made to curette the remainder of the interior of the uterus. This operation is usually termed digital removal and light curetting, but the term "light curetting" varies with the man behind the curette. What one man would describe as a light curetting another would call a heavy and complete scraping of the greater part of the interior of the uterus. It would be impossible to try to differentiate between them in this paper so that I have included in the term curetting all cases in which the curette was introduced into the uterus.

There were 258 women suffering from septic abortion whose temperature came down to normal within forty-eight hours after the uterus had been emptied. Of these 250 were and eight were not submitted to curettage, using this term as I have mentioned above. This group includes those whose condition is commonly termed sapræmia, when the symptoms are due to absorption from decomposing retained products of conception and those who are fortunately able to overcome the uterine infection quickly.

The next group includes those women suffering from septic abortion in whom the temperature did

not come down to normal until more than forty-eight hours after the uterus was emptied. There were ninety-one cases in this group. In 58 or 63% the temperature was elevated for seven days or less; in 22 or 24% the temperature was above normal from eight to fourteen days, whilst in the remaining eleven cases the temperature was above normal for more than fourteen days. Amongst the latter women there were four in whom the persistence of the temperature was due to conditions which did not arise from genital sepsis and there were three in whom there was a possibility of a generalized infection, but the blood cultures were sterile. This group includes those with a more severe and persistent type of infection than the first group, but the infection apparently remained localized to the uterus. Of the ninety-one patients eighty-two were submitted to curettage and nine were not so treated.

The corresponding puerperal group contains forty-three patients. In these women the symptoms were those of uterine sepsis and in eleven of them there were infected perineal or vaginal lacerations as well. In four women the symptoms suggested a possibility of a mild general infection, but the blood culture was sterile, so I have included them under this group.

Thirteen of these women were confined in the hospital and thirty were sent in from outside after confinement. Amongst the thirteen hospital cases there were five in which the placenta had been manually removed, and four others in which there had been an operative delivery; two of the latter were cases of *placenta prævia*. The curette was used in only one of these hospital cases and that was merely to detach one piece of placenta which could not be detached with the finger. In the treatment of five patients sent in from outside the curette was used after admission.

A short series of fourteen women with symptoms of salpingitis commencing from two to six weeks after an abortion is put in here. It is difficult to say whether the infection came from an ascending gonorrhœal infection or from mild uterine sepsis.

Of uncomplicated perineal infection we had twelve cases; eight patients were sent in from outside and four were confined in the hospital.

The next group contains ten cases. They were women upon whom Cæsarean section had been performed, and in whom the abdominal wound suppurated; in two the uterus was infected as well. All of these women recovered.

There were nineteen women in whom the main or the only complication apart from the primary uterine sepsis was femoral thrombo-phlebitis.

There were sixteen puerperal cases and only three following an abortion which indicates a greater tendency towards this complication in women confined at or near term. This greater tendency is seen also in the septicæmic patients. Five women developed femoral thrombophlebitis amongst forty-nine patients with puerperal, as contrasted with one woman with this complication amongst forty-five with post-abortion septicæmia. One of the Cæsarean section patients also developed femoral thrombo-phlebitis. Five of these patients with femoral thrombo-phlebitis were confined in the hospital; one of them died of embolism ten days after the femoral thrombosis occurred and just when the temperature was becoming normal. Eleven patients with femoral thrombo-phlebitis were admitted from outside and in one of those the symptoms suggested a mild general infection.

A further group comprises the women in whom either salpingitis or an intraperitoneal pelvic abscess developed as a local spreading from the infected uterus. In a few of these there were other less marked foci of infection and in two of the post-abortion cases with sterile blood cultures there was a possibility of septicæmia of short duration.

In contradistinction to the last group the post-abortion here far outnumbered the puerperal cases, as there were fifty-two women with these complications following upon a septic abortion and only eight following labour.

These figures are interesting but, of course, they do not represent the proportion of patients with these complications following upon abortions or confinements treated in hospital, as a large number were admitted with the complication already developed. The same applies, of course, to all of the groups.

Of the fifty-two patients with post-abortion septicæmia twenty-seven were treated by curettage either in the hospital or by outside practitioners (see Table III) and twenty-one were not submitted to curettage and the histories of four women did not state whether they had been treated by curettage before admission.

Table III.—Analysis of Treatment in 60 Cases of Salpingitis and Intraperitoneal Pelvic Abscess, 8 in the Puerperal and 52 in the Post-Abortion Group.

Treatment.	Number of Patients in Puerperal Group.[1]	Number of Patients in Post-Abortion Group.[2]
Curetted	..	27 (? more)
Colpotomy	3	17
Section and colpotomy	..	2 (1 died)
Section	..	2 (1 died)

[1] One patient was confined in hospital and seven were confined outside.
[2] Two patients who possibly suffered from septicæmia recovered.

Colpotomy with drainage *per vaginam* was employed seventeen times; section and colpotomy was performed twice with one death two days after operation. Two other patients had the abdomen opened and the tubes removed for salpingitis and one of these died two days after the operation.

Of the eight patients with puerperal septicæmia but one was confined in hospital and she developed salpingitis three weeks after an afebrile puerperium. Three of the other seven who were admitted from outside required colpotomy and drainage *per vaginam*.

Pelvic cellulitis is the heading of the next series of cases (see Table IV). Here again there seems to be a great difference in the frequency of this complication in post-abortion and puerperal sepsis respectively, although it is what one might expect as traumatic lesions of the cervix are more common after labour at or near term.

Table IV.—Analysis of Treatment in 44 Cases of Pelvic Cellulitis, 32 in the Puerperal and 12 in the Post-Abortion Group.

Treatment.	Number of Patients in Puerperal Group.[1] [2]	Number of Patients in Post-Abortion Group
Curetted	4	8
Abscess opened ..	5	4

[1] Of the total of 32 patients in the puerperal group, six were confined in hospital and 26 outside.
[2] Three patients suffered from a condition which was possibly septicæmia. One of these died; she had very extensive trauma.

The post-abortion cases numbered twelve whereas the puerperal cases numbered thirty-two.

An abscess formed and was opened in four of the women suffering from pelvic cellulitis following abortion and in five following labour.

In three of the puerperal cases with sterile blood cultures there was a possibility of a generalized infection. One of these patients died, but she had such extensive pelvic lacerations that it is possible that she died from them and not from a generalized infection.

Six of the women with pelvic cellulitis following labour were confined in the hospital and twenty-six were sent in from outside. Of the six patients developing cellulitis after confinement in hospital two were discharged after an afebrile puerperium and readmitted in the third week as cellulitis had developed.

Puerperal septicæmia constitutes the next group and it contains forty-nine cases (see Table II). In this group as well as in the next one I have excluded all cases that could not be definitely classed as septicæmia.

I have also put in two cases in which death occurred within four days of confinement and which were signed up as doubtful cases of acute yellow atrophy, but there was a probability of acute sepsis being the actual cause of death.

Professor Cleland and Dr. Magarey, of Adelaide, have recently described a series of cases of post-abortion sepsis due to the *Bacillus welchii* and these two cases were possibly due to this type of infection.

Of the forty-nine women suffering from puerperal septicæmia twenty-one recovered and twenty-eight died, a mortality rate of 57·1%.

As there is not time to discuss treatment in this address, I have not excluded any woman who was moribund on admission to the hospital. Some of the women in the two generalized infection groups were in hospital under twenty-four hours before death and others who lived longer than this were in a hopeless condition on admission.

Eleven of the 49 women were confined in hospital. One was confined in the externe department, two were sent in as suffering from obstructed delivery after attempts at delivery outside, one of these was with difficulty delivered of thoracopagus twins and thirty-five women were cofined outside. Only two of the women who were confined in hospital, had normal deliveries; one of these also suffered from eclampsia. One *per vaginam* examination was made in her case, in the other there was no vaginal examination during labour, but the curette was used on the ninth day and immediately the temperature chart changed from sapræmic to a definitely septicæmic type.

In four others *placenta prævia* necessitated various vaginal and intrauterine manipulations and in two a putrescent fœtus was delivered. The placenta was manually removed in five of the eleven women. The method of removal of the placenta was recorded on the histories of only about one-third of the women who were confined outside the hospital; in just under half of these cases manual removal was performed. Here as elsewhere manual removal of the placenta is one of the commonest causes of puerperal septicæmia.

During the period of five years and five months from which these cases were taken there were just over 10,000 confinements in the interne and externe departments of the hospital, generalized infection occurred in twelve cases and six patients died.

Post-abortion septicæmia is the heading of the next group. It contains 45 patients. Of these 39 died and six recovered, a mortality rate of 86·6%.

It is interesting to record that amongst the 45 cases of generalized infection following upon abortions, there was one woman who had three full-time children and following upon these she had twenty-one induced abortions. She would not reveal the method of induction. After a febrile period of fifty-two days she ultimately recovered.

Table No. V. indicates the natures of the delivery in the 50 women who were confined in hospital. Ten women had normal deliveries and in eight of these no vaginal examinations were made.

Table V.—Puerperal Sepsis (Hospital Patients).

Type of Delivery.	Number.
Normal labour	10
Manual removal of placenta	4
Manual removal following operative interference	7
Operative interference	19
Cæsarean section (infected wounds)	10
Total	50

Omitting the ten Cæsarean sections there were 30 patients or 75% of the total with some interference during labour.

In three women septic symptoms appeared during the third week of the puerperium, the early part of the puerperium had been afebrile and they had been discharged from the hospital.

When we exclude from our figures groups which have no corresponding puerperal or post-abortion

group (see Table VI), we find that there were 148 women who suffered from moderate or severe puerperal sepsis and of these 30 or 20·2% died and 203 women who suffered from moderate or severe post-abortion sepsis and of these 41 or 20·1% died.

Table VI.—Comparison of Results in Corresponding Types of Puerperal and Post-Abortion Sepsis.

Variety of Sepsis.	Number of Cases.	Number of Deaths.	Percentage of Deaths.
Post-abortion	203	41	20·1
Puerperal	148	30	20·2

It would be thought that with the greater trauma of the soft tissues that occurs during labour, and the much greater size of the puerperal wounds that the mortality rate should be higher than in post-abortion sepsis. Here the questions of a more virulent primary infection or a less well developed local defensive mechanism or an incorrect intrauterine treatment in post-abortion sepsis have to be considered.

Remarks on the Analysis of Case Records.

The tabulated cases which I have put before you, indicate that there are considerable differences in the effects of sepsis in post-abortion and puerperal cases respectively. I admit that this is a comparatively small series, but the figures are consistent in different types of infection and therefore are more likely to be correct.

In the first place why is it that femoral thrombophlebitis seems to follow labour so frequently and abortion so infrequently? Femoral thrombo-phlebitis occurred in 22 women or 12·9% of the 170 suffering from puerperal sepsis, whereas it occurred in only four women suffering from post-abortion sepsis. If we omit the group of 258 women who recovered quickly and for whom we have no corresponding puerperal group, it occurred in four women or 1·8% of the patients in the remaining 217 post-abortion cases.

Is it that the blood vessels are more dilated at term and the thrombi in the large uterine vessels become infected with a mildly pathogenic germ which does not tend to grow rapidly in the blood stream? Possibly the defensive mechanism against sepsis which Hofbauer has described as being more in evidence during the latter weeks of pregnancy, may have some effect in controlling the spread of infection after labour at or near term. He has found that towards the end of pregnancy certain phagocytic cells become more numerous in the connective tissue forming the base of the broad ligament and round the cervix and these cells are particularly noticeable around the blood vessels. These cells are supposed to assist in the defence of the body against bacterial infection. Possibly also the difference in virulence of extrinsic and intrinsic organisms may be the determining cause.

The tendency towards a thrombotic type of infection is also seen amongst the cases of generalized infection, as amongst the forty-nine puerperal cases we had five cases of pyæmia and but one pyæmia amongst forty-five post-abortion generalized infections.

Secondly, why is it that salpingitis and intraperitoneal pelvic abscess seem to occur so much more commonly after abortion than after labour? (see Table III). There were fifty-two post-abortion and but eight puerperal cases. I have no definite evidence as to why this occurs, the intrauterine douche has been blamed, but I think that it is more often due to the fact that the cervix is frequently very tightly plugged with gauze and this tends to dam back infected secretions. I shall refer to this again later. Possibly the Fallopian tube may be more patent after an early abortion than after labour as the *decidua capsularis* and the *decidua vera* may not have fused, whereas it is stated that the tube does not become patent until the third week after labour. On account of this non-patency of the Fallopian tube it is also stated that puerperal salpingitis is more frequently caused by infection travelling by way of the lymphatics.

Whatever may be the cause of the complication, there is no doubt that conservative treatment, merely opening and draining abscesses when necessary, gives good results in these cases. Quite a number of authorities state that the abdomen should be opened immediately a salpingitis is diagnosed. In this series only four patients had the abdomen opened and two of them died. The other fifty-six were discharged from hospital and no doubt the majority of them recovered completely.

Thirdly, the greater proportion of cases of cellulitis of the broad ligament amongst the puerperal cases is what one would expect owing to the comparative frequency of cervical laceration after labour.

Fourthly, when comparing cases with generalized infection after labour and after abortion we can readily see several differences.

The mortality in puerperal cases was 57·1%, in post-abortion 86·6% (see Table VII).

Table VII.—Comparative Analysis of Patients Suffering from Septicæmia.

Subject for Analysis.	Puerperal Group.	Post-Abortion Group.
Total number of patients	49	45
Number who recovered	21	6
Number who died	28	39
Mortality rate	57·1%	86·6%
Duration, 7 days and under	8	13
Duration, 8 to 14 days	9	16
Duration, 15 to 88 days	32	16
Percentage, mortality under 14 days	34·6%	64·4%
Number treated by curettage ..	15	35
Percentage treated by curettage ..	30·6%	77·7%

In the puerperal cases in 34·6% of the total death resulted in fourteen days or under, whilst in the post-abortion septicæmias in 64·4% death occurred within fourteen days of the onset of

symptoms. These two facts indicate that post-abortion generalized infection is more fatal and more rapidly fatal than is the corresponding puerperal condition.

There is no doubt that patients after abortion on the whole run a greater risk of infection by virulent extrinsic organisms. Possibly this extrinsic infection is the cause of the difference in the mortality rates, but other factors must be taken into consideration.

We have record of curetting in 77·7% of the abortion cases and in 30·6% of the puerperal cases. This may account for some of the differences noted above, as curetting is very apt to cause a further dissemination of infection and this is exemplified in three of the puerperal cases in which the curette was used in hospital. The curetting was followed by an immediate and great increase in the septic symptoms. In some of the post-abortion cases also the curetting evidently did harm. But as most of these women were submitted to curettage before or shortly after admission to hospital, it is impossible to say from a study of the hospital histories and temperature charts whether the curettage had a harmful effect.

The complications of the generalized infection cases were very different under the two headings (see Table VIII).

Table VIII.—Comparative Analysis of Complications Among Septicæmic Patients.

Nature of Complication.	Puerperal Group.	Post-Abortion Group.
Septic lacerations	8	..
Pelvic cellulitis	6	3
Pleurisy	5	..
Pneumonia	..	9
Phlegmasia	5	1
Pyæmia	5	1
Generalized peritonitis	2	12
Intraperitoneal pelvic abscess	1	5

In the puerperal cases, omitting septic lacerations which are not present in the other group, we find that pelvic cellulitis, pleurisy, phlegmasia and pyæmia are the commonest complications, whereas in the post-abortion cases generalized peritonitis and pneumonia are by far the most common complications and intraperitoneal pelvic abscess comes next on the list.

It is difficult in some women to be certain whether the condition is one of a generalized infection or not, as the bacteriologist finds that the blood cultures are sterile not only in cases of clinically undoubted septicæmia, but also in cases where there is a probability of this condition. I have taken pains to make sure that only undoubted cases of septicæmia are included in the two septicæmia groups.

Included in the other puerperal groups there are eight women who suffered from puerperal sepsis in whom the symptoms suggested a generalized infection. Seven of these recovered and one died. The death in this case may have been due to severe pelvic lacerations and not to a generalized infection.

There were also five women in the post-abortion groups who might be considered to have suffered from a mild grade of septicæmia, but in whom the blood cultures were sterile. These five women recovered.

If these women had been included in the septicæmia groups, they would have made an appreciable difference in the mortality rates and particularly so in the puerperal group.

From the study of the literature on septicæmia it is noticed that with carefully controlled and repeated blood cultures, anaerobic and aerobic, many investigators find a transient bacteriæmia in a proportion of women who have a sharp and short-lived febrile period. These cases clinically are not what would be termed septicæmic, but rather localized sepsis.

I will quote the following from de Lee:

> The determination whether the infection is limited to the uterus or has already invaded the blood is not easy. Schotmüller has proved that in many cases formerly considered local diseases, a hæmolytic anaerobic streptococcus may be cultivated from the blood.

Unfortunately our pathological department is understaffed and not sufficiently equipped to undertake detailed bacteriological research into these cases; our records are not so complete bacteriologically as we should wish. We have hopes, however, of further assistance in these matters in the near future.

Recently Dr. White, of Melbourne, who has had part of the Edward Wilson Trust Funds to pay the expense of detailed bacteriological research into the problems of puerperal sepsis, has published the results of his investigations and he apparently has found bacteriæmia in a large proportion of cases, but has failed to do so in some cases which clinically suggested generalized infection.

Prophylaxis.

Prevention of infection will be mentioned in rather a random fashion, some aspects being omitted altogether.

Infection in obstetrics may arise from extrinsic or intrinsic sources. Extrinsic infection is easily controlled by the use of rubber gloves, which should always be worn by anyone whose hands come in contact with the patient's genitals during confinement and the early part of the puerperium. Intrinsic infection may be from foci of infection in other parts of the patient's body, from fæcal contamination of the perineum or from organisms present in the patient's vagina.

Sepsis in Abortion.

The obstetrician is usually less favourably situated as regards the prevention of infection in abortion than in confinements at term, as he is not asked to attend upon the woman until the abortion is in progress. In quite a number of women suffering from abortion infection of a mild or severe degree has taken place before medical assistance is summoned, so that under these circumstances it becomes a question of attempting to limit the spread of the infection rather than the prevention of in-

fection. Let us consider the prevention of infection first.

I will mention here a few points in connexion with the details of the operations by which we may and frequently have to empty the uterus during an abortion, the operation being digital removal and curettage either singly or combined.

First there is the use of smooth surfaced rubber gloves in all vaginal and intrauterine work.

The main objectives in all obstetrical operations are a minimum of trauma and non-introduction of sepsis. The fingers or the whole hand encased in smooth surfaced gloves can be manipulated so much more easily in the genital passages that they must of necessity cause less trauma than when rough surfaced gloves are used. In my opinion the smooth glove will tend to carry a much smaller proportion of germs from the lower to the upper parts of the genital tract than the rough surfaced ones will. The leucocytes may be able to destroy this smaller proportion, whereas a more massive infection may defeat the leucocytes.

Secondly, there is the packing of the uterus with gauze after intrauterine manipulation or curettage. This is in my opinion merely a habit and a bad one. It is unnecessary and dangerous. It is unnecessary as a means of hæmostasis, as we have other and safer means of checking hæmorrhage, such as extract of the pituitary gland, the preparations of ergot suitable for hypodermic medication, the hot intrauterine douche and bimanual compression of the uterus. These are the methods that are of service in *post partum* hæmorrhage and they act just as well in abortions. Of course, it is impossible to get the whole fist into the vagina after an abortion, but the body of the uterus can be compressed for five minutes between two or more fingers of one hand in the anterior fornix and the other hand spread out over the posterior wall of the uterus.

Packing of the uterus in my opinion is dangerous. First, because infectious material may be pushed into the uterus; a gauze packer will diminish this risk. Secondly, gauze packed into the uterus will tend to dam up secretion in which organisms will multiply; this is especially the case when the gauze is packed tightly into the cervix. Thirdly, the damming back of secretion in infected cases may cause a reflux of infectious material into the Fallopian tube and thus set up a salpingitis or peritonitis. Fourthly, infectious material may be carried up on the fingers or instruments introduced into the vagina later on when the gauze is being removed.

For many years I have refrained from using gauze after curetting the uterus except in 1% or 2% of the cases and not once have I had occasion to regret this course of action.

One more observation before I leave this subject. As hæmorrhage often occurs during curetting and as this is due to uterine relaxation, inject the two drugs, "Pituitrin" and "Ernutin," which stimulate contraction and retraction just before commencing the operation and thus use them to prevent rather than arrest hæmorrhage.

Limitation of Spread in Post-Abortion and Puerperal Sepsis.

There is no doubt that in cases of post-abortion sepsis when the infection has already spread beyond the confines of the uterus, any interference with the interior of the uterus is strictly contraindicated. I would also stress the fact that examinations and manipulations in these women must be gentle, otherwise infectious clots may be detached or recent peritoneal adhesions broken down, with further dissemination of the infection.

Both of the above conditions also hold good in regard to puerperal infection and in infection following labour at or near term the interior of the uterus should not be curetted.

We can readily get a mental picture of what happens sometimes when the temperature rises above the normal level after a confinement. The medical attendant is obsessed with the idea that something has been retained in the uterus. He may start out with the object of digital examination of the interior of the uterus. He feels nothing with his finger and instead of ceasing at this stage he thinks he will feel round with the curette. A few aimless strokes of the curette remove only some shreds of tissue. Hæmorrhage commences from the opened vessels, the curette is then used more vigorously in the vain endeavour to find a piece of placenta, further and profuse hæmorrhage occurs and the uterus is hurriedly packed with gauze which is left in the uterus for from six to twenty-four hours.

The results of this aimless use of the curette are: First, the woman has lost a considerable quantity of blood, a loss which she can ill afford. Secondly, a large portion of the interior of the uterus has been freshly wounded and thirdly, the gauze packed, as it often is, lightly in the cavity of the uterus but tightly in the cervical canal, dams back infected secretions and thus tends to promote further spread of the infection.

There is diversity of opinion, however, in the uterine treatment of infection following upon abortion where the infection is apparently limited to the interior of the uterus. Time will not permit me to discuss this question, but there is no doubt that more people are adopting the wiser policy of non-interference with the interior of the uterus, unless hæmorrhage is the main symptom.

Prevention of Puerperal Infection.

The obstetrician is, or he should be, more favourably situated in regard to the prevention of infection during labour if he adopts the methods of modern obstetrics which are:

1. Antenatal supervision.
2. Hospital treatment of the abnormal cases.
3. A simple efficient technique during labour.

In regard to the latter, permit me to quote a passage from an article by Professor Chipman, of Montreal:

> As regards obstetrical procedure the one important rule is that the parturient vagina should be entered with the same respect as the peritoneal cavity. Abdominal palpation will reveal not only the presentation and position of the child but also in the majority of cases the amount of descent of the head; the dilatation of the cervix may

be learned *per rectum* and the heart beats truthfully indicate the condition of the child. A vaginal examination should only be made for good and sufficient reasons and with the greatest observance of respect.

Here I would say that all obstetric nurses during their training should be compelled to use gloves during labour and the early part of the puerperium. One of the regulations of the New South Wales Registration Board in connexion with the practice of midwives reads as follows:

"The midwifery nurse whenever making an internal examination shall wear sound sterile rubber gloves."

The New South Wales Nurses' Registration Board's regulations came into force only this year and we hope that this regulation will have an appreciable effect on the number of cases of puerperal infection; it certainly should have an effect. The effect will be more apparent if medical practitioners will assist the Board by compelling midwifery nurses to observe the regulation and by reporting its non-observance.

The impatiently managed third stage is a potent cause of puerperal infection. The third stage may be called a miniature labour. During its first stage we should interfere as little as we do in the first stage of the larger labour and not until the uterus has separated the placenta and expelled it from the upper retractile portion should we interfere. Impatience may necessitate a manual removal.

Placenta prævia is also a common cause of sepsis and in the management of this condition there are three points which I would like to stress. First, if plugging of the vagina is indicated, gauze should not be pushed in through the cervix. If gauze is pushed through the cervix it may detach more of the placenta, it may carry in infectious material and further it may prevent the proper pressing of the lower uterine segment against the ovum which is the means by which we attempt to control hæmorrhage. Plug the vagina efficiently and omit the cervical packing.

Secondly, if version is to be employed, turn the child by external instead of by combined version and then bring down a leg through the cervix. This method causes less blood loss and less intrauterine manipulation.

Thirdly, I would recommend to you as a method of choice in head presentation Willett's scalp traction method which in my opinion will replace most of the other methods at present in use. Willett's forceps catch a fold of the scalp. The forceps can be applied through a cervix admitting one finger, a weight of one or two pounds tied to the handles of the forceps and slung over the end of the bed gently pulls the head against the placental site and controls hæmorrhage during the stage of dilatation.

Vaginal and intrauterine manipulation are reduced to a minimum when this method is employed and I do not doubt that it will cause a great diminution in the number of cases of sepsis following *placenta prævia*.

There are various other preventive aspects of puerperal and post-abortion sepsis, but time will not permit me to mention them.

Joseph Bancroft, whose memory we honour to-night, lived in the days when preventive obstetrics was practically unknown. About the time of his death the great apostle of the more modern obstetrics, the late Dr. Ballantyne, of Edinburgh, was commencing to influence obstetric thought. About twenty years elapsed before his pleadings for preventive obstetrics affected the world generally.

In conclusion, as regards the prevention of puerperal and post-abortion sepsis permit me to quote the words of Credé: "Limit as far as possible puerperal wounds, be restrained and gentle in all manipulation and do not infect those wounds or permit them to become infected."

Acknowledgment.

I wish to thank Dr. Bruce Williams, Superintendent of the Royal Hospital for Women, for assistance in tabulating the case records.

THE SURGICAL APPROACH TO THE ETHMOID.[1]

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Anatomical Considerations.

Before entering into the matter proper of this paper I hope you will forgive me if I point out the general anatomical relationship of the structure concerned in the operation which I am persuaded offers anatomically the safest and most direct access to the region with which I wish to deal.

Following the description of Logan Turner, the ethmoid bone consists of the mesial vertical plate, the cribriform plate and lateral masses.

The vertical plate forms the upper part of the septum of the nose. The cribriform plate passes horizontally from the vertical plate immediately below the *crista galli* to the upper border of each lateral mass. Each lateral mass of the ethmoid bone contains a number of irregularly shaped air spaces which constitute the ethmoid cells. Its external surface is a perpendicular plate of bone, the *os planum* or *lamina papyracea*, which forms the greater part of the inner wall of the orbit. Its internal lateral surface takes part in the formation of the upper part of the outer wall of the nasal chamber and presents the irregular convoluted appearance called the ethmo-turbinated bones.

The ethmoid air spaces are bounded externally by the *os planum*, internally by the ethmo-turbinated bones. Superiorly they are completed by the depressions on the ethmoidal edge of the orbital plate of the frontal bone. Inferiorly they are completed by the ethmoidal edge of the orbital plate of the superior maxilla. Anteriorly and externally the cells are walled in by the lachrymal bone, situated immediately in front of the *os planum* and the nasal process of the superior maxilla. Posteriorly the

[1] Read at a meeting of the Section of Oto-Rhino-Laryngology of the New South Wales Branch of the British Medical Association on July 12, 1927.

ethmoid cells are completed by the articulation of the lateral mass with the sphenoid bone.

Thus the ethmoid labyrinth is placed anteroposteriorly along the entire upper half of the nasal cavity with the latter lying medially and the orbit on its lateral aspect.

Further points in the anatomy to which Hajek draws special attention, are the following.

He writes:

> In some cases the nasofrontal duct may lie in the middle of the ethmoid cells, that is, quite a lot of these may lie in front of the duct. Thus a sound passed into the sinus passes the wide open mouths of the ethmoid cells surrounding it. This fact indicates that the diagnosis of suppuration in the frontal sinus and the ethmoid cells must be made from a common viewpoint.

Again:

> Most of the dilated types of middle turbinate bone are considered to be extensions of the ethmoid labyrinth, and according to my observations such ethmoid cells always belong to the posterior group.

Further:

> Frequently anterior ethmoid cells bulge into the frontal sinus, in these cases if the bony wall is not complete the infection may quickly spread to the frontal sinus.

Again:

> Sometimes the body of the sphenoid is divided horizontally into an upper and lower portion; of these the lower portion represents the true sphenoid cavity and the upper portion is the end of the spheno-ethmoid cell, displaced into the sphenoid. This formation is of great interest since the small wing of the sphenoid which borders upon the base of the skull, forms the spheno-ethmoid cell instead of the roof of the sphenoid cavity. Thus a part of the frontal lobe, with the olfactory lobe, the chiasm of the optic nerve and the *hypophysis cerebri* may lie on the upper surface of a posterior ethmoid cell. The internal carotid artery and cavernous sinus may also be in very close relationship to it in place of the sphenoid.

He points out that the mucous membrane lining the sinuses consists of three layers, of these the deepest layer takes the place of a periosteum and enters without interruption into the medullary spaces of the underlying bone. This is particularly so in the case of the ethmoid labyrinth. Therefore inflammation of the muco-periosteal covering often extends into the bony substratum. Nasal polypi he considers to be the typical products of chronic infection of the mucous covering of the ethmoid. This view is held by most authorities. The œdematous infiltrated parts hang downwards as a result of their weight, whereby a kink of the blood vessels occurs. This leads to the further increase in the volume of the polypus. Multiple polypi should be looked on as pathognomonic of ethmoiditis.

Schaeffer says that he has observed a number of specimens in which the mucous membrane of the ethmoid cells was in actual contact with the *dura mater*.

Now let me turn to the paper proper.

Discussion on Various Methods of Approaching the Ethmoid.

My selection of the title of this paper and of this region for the subject of a paper has been deliberate for two reasons.

First, because there recently appeared in *The Journal of Laryngology* under this title an interesting article by Mr. J. B. Horgan, in which I found myself interested, but unconvinced. This stimulated me to define my own views on the subject with the hope that I might elicit the opinions of others in this country, since for some years I have adopted a very different plan of attack to that advocated by Mr. Horgan.

Secondly, this region is one of the most anatomically difficult and vulnerable with which we have to deal. It seems therefore that a full discussion of the anatomical and surgical problems involved is well worth provoking. The ethmoid labyrinth is a region which for one reason or another has apparently been somewhat neglected; chiefly, I think, because of the relatively high death rate, recorded in the literature, which has resulted from the operations performed on it when any degree of complete removal of all cells has been attempted. I shall endeavour to put before you the view that the reason for this high death rate has been, not the special postoperative frequency, nor any inherent special tendency for osteomyelitis to occur in this region, but because the labyrinth which is in such intimate relation to dangerous areas and is subject to such variation in size and character, has been attacked later than would have been the case in pus formation in other parts of the body. This delay has been largely due to the latent non-obvious character of the symptoms and the natural failure on the part of the general practitioner to recognize the signs of a diseased ethmoid labyrinth. The diagnosis after all really depends on a nasal examination. Moreover, when the disease has been recognized, it has been treated, I believe, from a direction which is not suited to the proper handling of all the exigencies of the condition. It has therefore been treated in a manner which falls short of the best surgical principles.

Most of us have no doubt taken the view, universal in all textbooks until quite recently, that the only and proper method of attack was through the nares. Such eminent authorities as Hajek, Tilley, Ballenger, Logan Turner and St. Clair Thomson in their respective textbooks have all advocated this procedure and although some have lately mentioned another possible line of attack through the floor of the frontal sinus, they have limited their recommendation for this line of action to cases with obvious disease of that sinus or to abscesses pointing in the orbit, coming either from the ethmoid labyrinth or the frontal sinus itself. And this operation, mark you, is one merely for the evacuation of obtrusive pus formation and not for the radical treatment of the ethmoid labyrinth.

I, therefore, am about to suggest a more excellent way of reaching this most difficultly placed region by a route which I venture to think is in better accord with both anatomical ease and surgical correctness, than that heretofore commonly used. Moreover, it is one which allows the surgeon to deal with all contingencies and complications, and one in which the extent of the surgeon's operative procedure can be seen, gauged and followed out at the time of operation, for in my judgement he should not cut or crush or pull, without seeing with

binocular vision exactly how far the region and structure will be affected by such procedure.

It is my contention that the present day operative procedure through the nose is not in accordance with the soundest surgical principles for the following reasons:

1. It allows of only monocular vision.
2. It does not allow of rapid and complete removal of the diseased tissue.
3. Owing to the length of time taken to perform even a reasonably complete removal according to our present ideas and by our present piecemeal methods, the absorption of toxins is still taking place and may be sufficient to cause harm to the general health. Hajek amongst other authorities mentions several cases of general ill-health culminating in neurasthenia definitely traced to ethmoid suppuration. Indeed, any of the conditions which follow from the absorption of toxins, is likely to arise. Our present procedure, as you well know, is dependent on the willingness of the patient to persevere in the treatment. We all know, however, that once the patient has been given a free airway by the removal of polypi *et cetera*, he immediately thinks he is cured and wishes to discontinue treatment. Perhaps a patient may start with the best of resolutions, but his patience or time at his disposal may be exhausted.
4. The surgeon must often be guided solely by the sense of touch and orientation as to the depth and distance to be traversed.
5. Because of the limitation of action owing frequently to an enlarged inferior turbinal or the restriction of view from hæmorrhage, no matter how skilful we are or may become, working in such an intricate and circumscribed region and under such trying circumstances must always be a source of difficulty to us and may be a danger to the patient. I confess that it makes me shudder when I read the description of Sluder's operation on this region in a recent textbook that "the knife should be pushed up till it comes in contact with the cribriform plate and after a little experience the surgeon easily recognizes the feel of the cribriform plate." This brings to my mind the thought of what has been the cost of that experience.
6. By working through the nares we are working upwards towards the danger zone of the base of the brain and the lymphatics of the cribriform plate and although we should in theory always avoid this latter region as much as possible, in practice it is not so easy.

It must be evident also that owing to the anatomical variations of the ethmoid labyrinth both in the numbers and size of the cells and in the fact that some of the cells are sometimes almost completely separated from the main body, the "border cells" of Logan Turner's description, some of which frequently occupy a position on the roof of the orbit, it is quite impossible from the restricted inlet of the anterior nares to deal at all adequately with these cells.

Also when we consider the frequency of dehiscences in the walls of these cells, instances of which are not uncommonly recorded in the anatomical literature of this region, and of necrosis of the bony walls of the cells in pathological conditions of the labyrinth, it becomes a very dangerous practice to rely too much on the unaided sense of touch.

It is my contention therefore that we must adopt a method by which we can deal adequately with the region to be attacked and at the same time (i) be able to see and gauge how far our surgical procedure is affecting the parts, (ii) see the widest and furthest limits to which one may go, (iii) avoid the danger zones and work away from them as much as possible, (iv) remove the whole of the diseased tissue, (v) afford the most efficient drainage possible.

My own experience from clinical observation is that ethmoid suppuration is very much more frequent than frontal sinus infection and almost as frequent as maxillary sinus infection and that many cases of frontal empyema have supervened on a previous ethmoid suppuration, for indeed the history of a number of cases seems to confirm this.

I find in practice that acute frontal sinus infections, either catarrhal or purulent, provided they are what might be called primary, that is occurring in an otherwise clean nose and not acute fulminating exacerbations supervening on a chronic ethmoid infection, will in a large percentage of cases drain themselves either of their own accord owing to the very favourably situated site for drainage of the fronto-nasal duct or with the help rendered by skilled surgical assistance to promote drainage, for example shrinking the mucous membrane, probing, lavage and lifting inwards of the middle turbinal *et cetera* without the need of a radical operation.

But in my opinion chronic frontal sinus infection has in many cases as a cause for its chronicity the reinfection and the keeping up of the infection by a diseased ethmoid labyrinth or cells which in many cases encroach on the frontal sinus.

Surely, too, when there is a diseased ethmoid region of long standing with pus formation and multiple polypi in the nose the chances that the frontal sinus has escaped some degree of infection are very remote. Thus in dealing with chronic ethmoid infections the surgeon should choose a method of operation which allows him to deal adequately with these two regions at the same time.

These cases of chronic ethmoiditis are allowed at the present time to persist for years without further treatment than the removal of a few polypi, as they present or cause obstruction, until complications arise or else the patients fall into the hands of a practitioner with more than the usual amount of knowledge of this subject; he passes them on to someone who recognizes the true condition and who is prepared to deal with it. In view of the large amount of correct knowledge of the seriousness of focal infection which has come to us the last few years, although I admit it occasionally leads to unjustified surgical excesses in ill-chosen cases, this delay in dealing with such an infection as that of the ethmoid which seems so frequently to become chronic, is most undesirable. If we teach the general body of the profession and public the seriousness of temporizing or dealing inadequately

with these infections, I think we shall have rendered a service to our patients.

In this connexion let me say that I doubt whether sufficient stress has been laid in the present text-books on the part played by chronic ethmoiditis as a factor for harm and especially on the severity of the complications which it may cause. It will be sufficient here for me just to mention the main types of complications that may occur.

Complications may occur:

1. By direct extension; such complications include orbital abscess and its sequelæ, thrombosis of central vein of the retina, optic neuritis, infection of tear sac, infection spreading to brain, for example extradural abscess, brain abscess, meningitis and thrombosis of the cavernous sinus.
2. By involvement of the alimentary or pulmonary tracts by swallowing or inhaling infective organisms.
3. By organisms passing into the blood stream and causing metastases.
4. By absorption of toxins.

I have been particularly struck by the fact that when I have opened fulminating frontal sinus suppurations with perhaps a history of only a few days to a week, the condition often found was that although the frontal sinus was full of pus, the lining of the sinus did not exhibit such pronounced nor old-standing pathological changes as the ethmoid labyrinth. The latter in some cases was literally cheesy and rotten and crammed with polypi, whereas the frontal lining would be found to be only thickened by congestion or to have a few polypi of obviously recent origin. This leads me to the opinion that the real culprit in many so-called frontal sinus suppurations is the ethmoid labyrinth and that the members of the medical profession should look on the presence of pus with multiple polypi in the nose as a factor of greater significance than that ceded to it by the present somewhat complacent attitude towards this condition.

Now that I have indicated the clinical need for interference and the surgical and anatomical points which have made me adopt this line of attack, I may say the procedure to be described has so far been carried out by me only on the very chronic cases which I have found resistant to the usual operations of removal of polypi, removal of the anterior end of the middle turbinal and perhaps of one or two of the anterior ethmoid cells, without venturing further into an area where I am, owing partly to the anatomical variations and partly to a restricted view, still naturally treading on uncertain ground. This is not to say that we must always be confined to such limits and indications as I have given because as our knowledge and technique become better we may find that earlier interference on the lines indicated hereafter is not only justified, but is the quickest and surest and safest method of cure of chronic ethmoid suppuration and may be the means of obviating or diminishing the frequency of the occurrence of dangerous complications. It is just with that object in view that we now operate on mastoid suppuration earlier than the old time limit, about three weeks, set down by the older Viennese writers.

Two difficulties arise in objection to this radical operation. First, the dislike of the patients to an external operation because (i) they know that the usual method of operation is through the nose, (ii) they think that it is "only catarrh" and of slight significance, (iii) the local practitioner has given them great relief before by the removal of polypi through the nose, (iv) their objection to and fear of a disfiguring scar, largely caused by the knowledge of scars and depressions caused by the old Killian frontal sinus operation which are so evident to view seeing that the face is uncovered. Secondly, the idea, very prevalent amongst the general medical public, that the eradication of disease of the ethmoid presents almost insuperable difficulties and undoubtedly there is distrust of a cure being effected within a reasonable time.

It seems to me that this idea has largely been caused by the fact that piecemeal removal of polypi as such through the nose necessitates long attendance over long periods and because those who institute the piecemeal removal do not recognize that there is a cause for recurrence of polypi and that the real root cause of the trouble must be treated.

Mr. Horgan in the article referred to attacks the ethmoid by Jansen's method through the upper and internal angle of the antrum. I have no doubt that in cases in which a radical operation has to be performed, it is possible to remove with comparative safety a larger portion of the ethmoid than can be removed through the nose alone, since the view obtained is more comprehensive; but even then it does not seem to be sufficient. And then again, not every case of ethmoiditis requires a radical antrum operation and my main objections to this type of operation still hold good, namely that when a surgeon is working in the posterior ethmoid region he cannot see the highest or widest limits to which he may go, but must trust largely to the sense of touch and orientation and especially is this the case when he is working upwards and backwards towards the dangerous areas.

It is my object to advocate the method to be described as a safe and sure method of dealing with chronic ethmoid suppuration, involving as far as we can tell both anterior and posterior ethmoid cells, because it enables us to remove the whole of the cells and also because it effects a great saving in the time required for a cure and therefore obviates the continued absorption of toxins from the diseased areas which must take place in treating the region by the usual slower piecemeal methods.

Results of the Operation.

I have to now operated on twenty-six patients of the type I indicate since I have selected only cases of long standing duration and not every patient whom I selected, would consent to an external operation. The first was done five years ago and during the last twelve months I have done eleven.

All have had many of the typical signs and symptomss of ethmoiditis, namely obstruction to breathing (mouth breathing), absence of any rise of tem-

perature, headache and full feeling at the root of the nose, dry pharyngitis, persistent sneezing, intermittent attacks of laryngitis, cough worse at night and on lying down. Moreover on examination of the noses of these patients I have found pus, multiple polypi, œdematous mucous membrane, egg-shell crackling on probing. All have suffered from various forms of general ill-health resulting from continued absorption of toxins and in every instance I have obtained a history of removal of polypi at intervals over a period of not less than three years at the hands of others.

Of my series of patients, three had had attacks of nephritis; two had bronchiectasis and one asthma at the time of operation. This last patient could not walk alone and had been in bed or had to be helped about for three and a half years.

Several of these patients had very pronounced disturbance of the sense of smell. Several had what they called "hay fever." None of these patients had a condition of frontal sinusitis or orbital œdema or abscess. One had a healed scar over what I found later to be a sinus leading from the ethmoid region. A knife had been put into this sinus on account of a pointing abscess on seven different occasions while the patient was attending the ophthalmic and casualty departments of a general hospital, but the patient had had no treatment for the nasal condition present from the inside of the nose. This patient consulted me for blockage in the nose, dropping of mucus *et cetera* into the throat and a bad smell in the nose.

Several had gastric disturbances.

My results have exceeded my first expectations in that I have had no deaths and all patients are more or less completely free of headaches and of the full feeling at the bridge of the nose so characteristic of the condition. All too are now entirely free of pus in the nose, but in one of the earlier cases this persisted for a year. In this instance I must have left a posterior "border cell" which has since become normal. There has been no diplopia in any of the patients operated on.

The cosmetic effect is excellent and in several cases it is difficult to detect the scar. The general health has been benefited to a great degree. One patient had infection of the tear sac which was lit up immediately after the operation, but this cleared up in about a month. Finally it seems to me this method had given such good results that it deserves to be given a more extensive trial in dealing with these chronic cases of ethmoid suppuration.

Description of the Operation.

The external approach through the floor of the frontal sinus has been advocated as long ago as forty-three years, in 1884, by Ogston and ten years later by Luc, then by Jansen in 1908, but lately Mr. Howarth, of London, and Mr. Godsall, of Sydney, have brought this approach to a better knowledge and repute. We must all acknowledge our indebtedness to these operators for their valuable advocacy of this approach to the frontal sinus and especially to the latter for his preference for the method of treatment in which the surgeon leaves the external incision open and treats the frontal sinus through this until healing is far advanced, the wound being then closed by secondary suture. This method seems to have proved its value. But all these operators have as their avowed object the enlargement of the fronto-nasal duct and the drainage thereby of the frontal sinus and of any orbital abscess which may be present. None of the authorities I have cited, has advised this method of approach for disease of the ethmoid *per se*.

The method I advocate for complete clearing out of the ethmoid cells takes advantage of this approach through the floor of frontal sinus. The ethmoid labyrinth is attacked both through the nose and through an external incision, but the work done through the nose is not undertaken until the operative procedure through the external opening is well advanced. The posterior ethmoid cells themselves are not attacked by way of the nose until the external approach has proceeded far enough to allow a good view of the boundaries and extent of the labyrinth, then and not till then do I think it advisable to use the cutting forceps or spoon for curetting the cells themselves, because only at this stage a clear view is obtained of the highest and widest limits to which an operator may go. I think it an advantage in many cases to do a preliminary operation on the septum or spurs or to cut off polypi and perhaps part of the middle turbinal with scissors, purely as a measure designed to give space and a better view during the major operation which follows.

The antrum of Highmore, if infected, should be appropriately treated either by washing out or of course, if this is not sufficient, by a radical operation. This should also be done prior to the attack on the ethmoid region. A skiagram should be taken, it may give valuable information concerning the size and the state of the ethmoid and frontal sinus and should be available at the operation. When all preparatory measures have been completed, a general anæsthetic is given by the intratracheal method and a sucker is also used. The external incision is then made.

My incision differs from Mr. Howarth's and Mr. Godsall's in that it is not so extensive, being only eighteen millimetres (three-quarters of an inch) in length and does not extend to the tightly bound down tissue at the side of the nose, but stops above the inner canthus (see Figure I). It follows in the sulcus between the eyeball and frontal ridge in the soft tissues because here the blood supply is good, the tissues are loose and the resulting scar soon disappears. The incision is carried through the skin and loose areolar tissue, then the surgeon works upwards, avoiding the muscle around the eyeball, to the floor of the frontal sinus, cutting through the periosteum, separating it widely downwards and a little upwards and putting in a self-retaining retractor in the manner indicated in Figure II. The incision being a small one, the necessary amount of room to work in is obtained by widely opening the self-retaining retractor in the upward direction shown in the figures, stretching the tissues to the full extent of the incision. By employing this method it is not necessary to

displace the tissues of the eyeball at all, as must be done in retracting downwards. This exposes the floor of the frontal sinus, *lamina papyracea,* nasal process of frontal bone, lachrymal bone and frontal process of the maxilla. The surgeon proceeds now as in the description of Mr. Howarth's operation to remove all the floor of frontal sinus, part of the lachrymal bone, but also a fairly large portion of the frontal process of the maxilla.

These procedures are sufficient to give good access and a good view of the ethmoid region.

Figure I.
Showing the Line of Incision.

Any infection in the frontal sinus is first dealt with by curetting with gauze or spoons *et cetera* and when only part of frontal sinus is involved, the rest is carefully left alone. Particular care and attention are paid to the internal angle of the floor of the frontal sinus, where it joins the inner table underlying the brain, to get this area quite clear. Then with a chisel the fronto-nasal duct is enlarged forwards and a large opening into the nose made by cutting through the anterior ethmoid cells (see Figure III). In cutting down into the nose I find it an advantage to stand over the mastoid region of the head, that is, almost at the head of the table and to cut downwards and forwards into the nose. It is then possible to continue to work on the exposed face of the ethmoid, carefully picking it away with forceps, first through the external opening and then with Grünwald forceps and curetting spoons through the nares, removing the middle turbinal and posterior ethmoid cells, watching from above the bite of the forceps, especially when the region of the floor of the brain and cribriform plate are reached; when spoons are used the work should always be from above downwards.

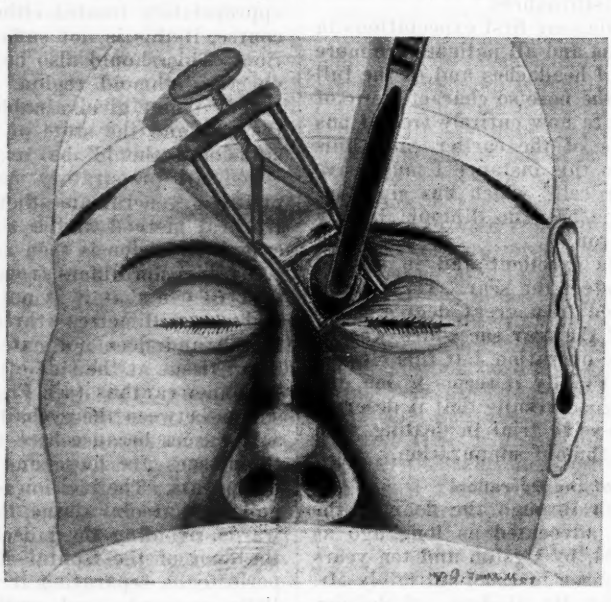

Figure II.
Showing Self-retaining Retractor in Position and Direction of Cutting with Chisel.

With care and patience it is possible to remove all the cells back to the sphenoid and deal with it if necessary. Pieces of loose bone are caught on a gauze plug which has been placed in the nose far back towards the posterior nares and the anterior portion of the nose is left free to work in. This plug catches most of the chips and they are drawn out with the gauze. With the sucker to help very little is likely to get down to the pharynx. I clean up with a little peroxide of hydrogen. A rubber tube is placed in the enlarged fronto-nasal duct and brought out of the anterior nares. This is removed in twenty-four to forty-eight hours, according to the amount of infection of the frontal sinus.

In stitching up, the periosteum is sutured first and separately, then catgut stitches are inserted deep to the skin and the edges are drawn together and one supporting stitch is put through all the deep tissues except the periosteum and including the skin (see Figure IV).

I have not found the tissues fall in afterwards, a point to which Mr. Godsall draws attention and I think possibly it is because the external incision is not so extensive, moreover in closing up the incision at the end of the opera-

tion, as I have said, I suture the periosteum separately, except for a small opening above the inner canthus in which a small piece of gauze is inserted for twelve hours when the frontal sinus is very dirty.

Finally a heaped-up pad is put on and some pressure exerted on the incision and the patient is put back to bed in the prone position with the head to one side. In this way if there is any undue hæmorrhage, it can at once be seen. The average stay in hospital has been nine days, but this can be cut down to six to seven. The nose is syringed twice daily through a Eustachian catheter with 50% hydrogen peroxide in normal saline solution. I instruct the patients to massage the inner canthus and surface of the scar gently after leaving the hospital, as I think it promotes the early disappearance of the scar.

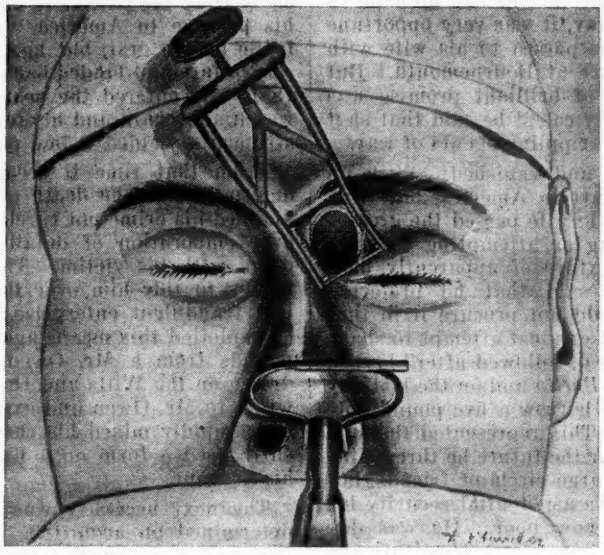

FIGURE III.
Showing the Introduction of the Chisel through the Anterior Nares.

They also syringe the nose twice daily with a one in four solution of peroxide of hydrogen in saline solution using a Higginson syringe and Eustachian catheter until crusting has ceased, usually in about three weeks.

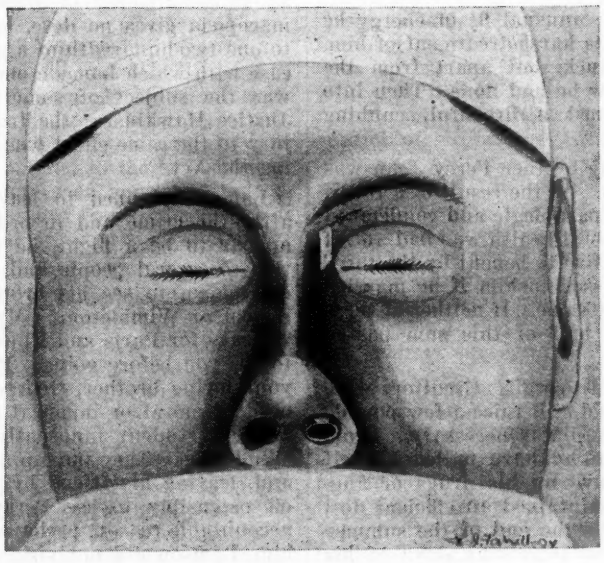

FIGURE IV.
Showing Scar at Completion of Operation and Tube in Position in the Anterior Nares.

DOCTOR LAMSON'S LAPSE.

By F. KINGSLEY NORRIS, M.D.,
Melbourne.

WHEN a London schoolmaster prophesied that the name George Henry Lamson would live long in the memory of man, he foretold better than he realized. If for no other reason Doctor Lamson will go down to history as one of the few men who have poisoned with aconitine.

George Henry Lamson first saw a London fog in 1850 and although there is little recorded of his earlier years, he seems to have been born with a flair for friendship and a genius for languages. He read and conversed fluently in French and German and at the completion of his medical course he set out on a European tour. He went to France and in 1871 celebrated his twenty-first birthday on the meagre fare of cats and rats provided by the siege of Paris. Here he practised until his reckless use of drugs made him a public menace. He then set off on a Mediterranean tour. At this time there broke out one of the perennial Balkan squabbles and Lamson eagerly enrolled first as a Serbian and later as a Roumanian army surgeon. An interesting statement was made after the trial by one of his colleagues who served with him in the Balkans: "He exhibited a mania for the administration of aconitine in almost every ease, using it in season and out of season and in such quantities as to alarm the medical staff and render his recall to England necessary." However as a reward for his humanitarian services he received numerous decorations from each country. But besides his medals he brought back to England a craving for morphine.

Tall and slim, he was an attractive young fellow with a welcome in his smile and soon after his return he married a Miss John, a ward in Chancery, who brought to the alliance a few thousand pounds. The *Married Woman's Pro-*

perty Act was not then law so this sum passed to Lamson. Mrs. Lamson had two brothers, Herbert and Percy. Three years after the marriage Herbert died suddenly while staying with the Lamsons. Later Doctor Lamson swore that he had no hand in this death, be that as it may, it was very opportune and seven hundred pounds passed to his wife with which he bought a practice at Bournemouth. But by now this young man of brilliant promise was gripped by morphine. Truly can it be said that shot and shell are not the only crippling agents of war.

The practice dwindled and vanished. With an effort he tried a fresh start in America, but from there it is recorded in 1881: "He passed the greater part of the day in dozing or attempting to read. He was then using a mixture of apparently morphia and atropine, but said that he preferred aconitine, but that he could not procure it in that section of the country." In one last attempt to shake off "those feet that followed, followed after" he fled to England on the *City of Berlin* and on the last day of the voyage managed to borrow a five pound note from the ship's surgeon. This represented the sum total of his fortune and for the future he threw himself on the mercy of his large circle of friends, but his reception was cool. As a potential security his professional ability was now poor. He was desperate, his wife and child were almost destitute and when the credit, inspired by his degrees and granted by the tradesmen, gave out, he dipped beneath the surface of morality and reached the depth of fraud. He drew a cheque for twelve pounds on a bank that had never held his account. That he should commit so grave an offence for such a paltry gain could mean either an initial temerity or a distorted mind. He came home and in an unusual fit of energy he cursed the universe and its harsh treatment of him. Most people had some luck, but apart from the death of his brother-in-law he had none. Then into his fuddled brain gleamed a dreadful, cunning thought.

Mrs. Lamson's surviving brother Percy John was a crippled boy of eighteen. As the result of a tuberculous kyphosis he was a paraplegic and condemned to a wheel chair. His general health was bad and it was doubtful if he would live to benefit by the three thousand pounds that passed to him if he married or reached the age of twenty-one. If neither of these contingencies eventuated half of this sum passed to Mrs. Lamson.

Lamson could not afford to wait. Creditors were closing and even if he could still raise a few pounds from his friends a big *coup* was necessary. From this time Lamson appears to have pulled himself together. Whether he gave up his drugs or augmented his supply and maintained an efficient dosage is not clear. Towards the end of the summer Percy John spent the last remaining days of his vacation with his sister and her husband at the Isle of Wight. The journey was exhausting to him and during the first night of his visit Percy had a violent shivering attack. The doctor prescribed a quinine pill which he made up himself with a small dose of aconitine. Percy, however, suffered no obvious ill-effects and like the dog of Goldsmith's "Elegy," the doctor it was who spent the restless night.

A keen conscience or a great fear drove Lamson away from the place and again he managed to book his passage to America. The second trip was as futile as the first, but he raised the money for his return fare and landed back at the end of November, 1881. He entered the nearest pawnshop where his watch and chain and his few remaining surgical instruments yielded a few pounds.

From that time it seems certain that Lamson determined on the death of his brother-in-law. He planned his crime not carelessly, but with a cunning over elaboration of detail that was to drag him down with his victim. The first requirement was money to tide him over the next few weeks. His last fraudulent enterprise had been kept quiet, so he exploited this means again. He obtained twenty pounds from a Mr. Owen by means of a cheque drawn on the Wilts and Dorset Bank. Next day he wrote to Mr. Owen and explained plausibly that he had stupidly mixed his cheque forms and inadvertently used a form on a bank where he had closed his account.

The next necessity was the drug and again he determined on aconitine. He first tried Messrs. Bell and Company, of Oxford Street, but was refused on the ground that he was unknown to the firm. Nothing daunted, he visited Allen and Hanburys where, as he fulfilled the requirements of the *Poisons Act* and furnished his name and address, he was supplied with two grains of the drug, a very large amount as the lethal dose is considered to be about one-fifteenth of a grain. The British Pharmacopœia gives no dose, but Martindale states up to one two-hundredth of a grain may be given. The ease with which Lamson obtained this deadly poison was the subject of some severe remarks by Mr. Justice Hawkins at the trial and a rider from the jury to the same effect was instrumental in tightening the Act.

Lamson planned to leave England immediately after the crime and in order that this should not appear to be a flight, he mentioned his projected trip to several people and used it as an excuse to call down to see his brother-in-law at Blenheim School at Wimbleton. "My dear Percy," he wrote, "I leave for Paris and Florence tomorrow and wish to see you before going. Believe me, my dear boy, your loving brother, George Lamson." Feeling the need of moral or immoral support, he persuaded a medical student innocently to accompany him to Wimbleton. They put up at a near-by public house and, leaving his friend by the fireside, Lamson set off ostensibly to see Percy John. For some unaccountable reason, perhaps because his nerve failed him, Lamson did not visit the school, but returned in twenty minutes and announced that his brother was looking wretched. "He cannot last much longer," he said. As has been stated this cannot be cited as an authentic example of clairvoyance. Again he vacillated and put off his trip to Paris for another day and went back to town. Here he came

across an old friend whom he had not previously laid under contribution and a few pounds were forthcoming. This seemed to steel his nerve and that evening he paid his final and fatal visit to Blenheim School.

It is difficult or impossible, even in view of Lamson's certain guilt, to explain the significance of his various actions during this visit. He appears to have realized that poisoning might be suspected and instead of attempting to avoid any questionable action to have acted in a most suspicious manner. Possibly his cunning mind reasoned that even if he were charged with the crime, one of his most suspicious actions (but really innocent) would be the main line of the accusation and this could be disproved.

Percy was carried upstairs to the dining-room where Lamson was chatting with Mr. Bedbrook, the headmaster. A glass of sherry was suggested and Lamson asked for some sugar to neutralize the alcohol. The significance of this is obscure as of course sugar has no such action. As his contribution to the party Lamson produced from his bag one of Messrs. Buzzard's famous Dundee cakes and some sweets. Evidence is doubtful as to whether this cake was already cut; there is no confirmation of this in the short hand notes of the trial. Lamson produced a pocket knife and appeared to cut a slice which he handed to his brother-in-law. Mr. Bedbrook was served and Lamson himself took a slice. The sweets were handed round indiscriminately, then Lamson, dipping into his bag, turned to Mr. Bedbrook: "While I was in America I did not forget you. I know the trouble you have getting your boys to take medicine. Here are some capsules, they slip down as easy as winking." He picked up a couple of capsules. "Here, Percy, you are a swell pill taker," and shovelling some sugar openly into a capsule, which Mr. Bedbrook declared later appeared quite empty, he handed it to the boy who swallowed it at once. Another was handed to the headmaster. Up jumped Lamson: "That's soon gone, my boy; I must be going now," and he fled from the room. He caught the boat train and crossed to France that night.

Within half an hour of the supper Percy complained of heartburn and was carried to bed. He became worse, suffering intense abdominal pain similar to a bout, he said, during a vacation spent with the Lamsons. Vomiting developed and he said his throat was burning and closing up, his skin felt as if it were being all drawn together. The abdominal pain became agonizing spasms. Dr. Berry, the school medical officer, was summoned and he at once suspected poisoning and asked for a consultation. Hot linseed poultices gave no relief, albumin water was immediately vomited, and although morphine gave some little comfort, within four hours of the onset, the unfortunate boy passed away.

A certificate was refused and a *post mortem* examination was ordered, but beyond some slight pulmonary congestion there appeared no obvious cause of death. Adolphus F. Williamson was placed in charge of the case. This brilliant Scotchman was at this time one of the leading lights of Scotland Yard. Two years previously he had been largely responsible for the conviction of that master criminal, Charles Peace.

It was known that Lamson would materially benefit by the death of the boy and the purchase of aconitine was revealed, so naturally his name was frequently mentioned in reports of the case, but Lamson had vanished. Five days after the crime a man walked into Scotland Yard and asked to see Inspector Butcher. "I am Dr. Lamson whom all the papers are speaking about in connexion with the death at Wimbleton. What had I better do about it?" A colossal bluff, but one doomed to almost certain calling. The question was answered by his arrest.

On March 9, 1882, the trial commenced at the Central Criminal Court before Mr. Justice Hawkins. There has been no more interesting figure associated with the English Bar than Henry Hawkins, later Lord Brampton, but always to his *confrères* " 'Enery 'Awkins of 'itchin." Albert Chevalier's famous song "Mr. Enery 'Awkins is a first class nime" was the saga of the law students for years. There are few more entertaining books than the Judge's own "Reminiscences." A brilliant barrister, in the 'fifties and 'sixties of last century he appeared in all the really big law cases, criminal or civil. In the famous Tichborne trial when Arthur Orton was prosecuted for perjury, Hawkins appeared for the Crown and he submitted the wretched imposter to such a withering cross-examination that, huge man as he was—Orton was over twenty stone—he positively trembled and quivered. The verdict was fourteen years' imprisonment. Henry Hawkins, Q.C., became Sir Henry, Judge of the High Court in 1876 and it fell to his lot to preside over many notable murder trials. Once the jury brings in a verdict of guilty, the Judge has no option but to pronounce sentence of death, so Sir Henry who was really one of the kindest of men was unfairly treated when he was so often called the "hanging Judge." He loved to wander out into the country with his little dog and enjoy the fresh air, but when in court would command every window and door to be closed tightly. Through the trial of Lamson the little Judge sat on the bench, the only person at his ease, grimly surveying the perspiring crowd.

Sir F. Herschel, Q.C., Mr. Poland and Mr. A. L. Smith appeared for the prosecution and Dr. Lamson was defended by Mr. Montagu Williams and three other leading barristers. A tremendous crowd fought for admission and all eyes were centred on the face of the man in the dock. To quote from Harold Barton: "His was a face that could not easily be forgotten, a lofty forehead, a pair of dark, restless, intelligent eyes and a thick black beard of the shape affected by Charles Dickens, in effect a lean sinister face, but the face of a thinker and of a man of refinement." He pleaded not guilty.

The Crown outlined a terribly strong case of circumstantial evidence. The prisoner's strong motive

for the crime, his purchase of aconitine, his extraordinary behaviour on the night of the crime—these were all elaborated. Then followed an extremely interesting period of expert medical evidence. This was the first notable trial where the results of experiments on animals were given as evidence. The few words uttered by the dying boy gave the clue to the scientific investigations. The organs had been submitted to Dr. Stevenson and Dr. Dupré. A modification of the Stas process was applied to the liver, spleen, kidney and stomach and an alkaloid was obtained which contained a trace of morphine and which, when placed on the tongue, gave a faint sensation of burning and tingling, leaving a numbness. To quote from Dr. Stevenson's evidence:

> When placed on the tongue the contact caused a burning sensation which extended to the lip, although the extract did not touch the lip. The character of the sensation was a tingling, a kind of numbness difficult to describe. It produced a salivation, a desire to expectorate and a sensation at the back of the throat as if it were swelling up and this was followed by a peculiar seared feeling as if a hot iron had been drawn over tongue or some strong caustic placed upon it. The effect of aconitine is a burning feeling extending down towards the stomach. It is a sickening feeling peculiar to this substance. I have never found it in any other alkaloid, and I have tasted a great number.
>
> With a portion of the alkaloidal extract I made an experiment. I dissolved it and injected it beneath the skin of a mouse. The animal was obviously affected in two minutes, exhibited symptoms of poisoning and died in thirty minutes from the time of the injection. I then made a similar experiment with Morson's preparation of aconitine, procured specially for this purpose. I dissolved it in the same solution that I had used for the extract and operated with it on a mouse in the same manner. The effect was indistinguishable from that of the extract.

No evidence was called for the defence. The *Criminal Evidence Act* did not at this time permit the prisoner to enter the witness box. Not until some years later, as a direct result of the martyrdom of Adolph Beck, did a prisoner become a competent witness.

Mr. Montagu Williams had been very skilfully coached in his subject and relied on a powerful address. He commenced with an indignant outburst against the cruelty of vivisection. He ridiculed the reliability of the experiments on the mice, as an injection of pure water would kill them. The same results could have been brought about, he said, by the alkaloidal products of decomposition. He stressed the openness of Lamson's actions. The defence urged that death was due to the pressure produced by the spinal curvature. Able as was the address the Crown had a terrible chain of irrefutable evidence.

Throughout the trial the brave little woman who had shared the stress and strain of his life stood beside Lamson and her daily handclasp and kiss added to the sadness of the days. The pathos of this was stressed by Mr. Williams in his closing address, "the effect of an adverse verdict would condemn to worse than death the thin spare figure."

Just before he commenced his address Mr. Justice Hawkins conveyed a message to Mrs. Lamson to leave the court and spare her sufferings, but she bravely stuck to her post.

The most affecting incident of the trial occurred just as the jury retired to consider their verdict. His Lordship had vacated the bench, but contrary to custom the prisoner did not immediately pass down the stairs to await the fatal summons. His solicitor passed up to him a document which with a series of scratches he signed. It was his will. Had he postponed this act until after the verdict the will would have been invalid as he ceased to exist as a citizen and lost all his civil rights.

He did not have long to wait. In three quarters of an hour his worst fears were realized and, protesting his innocence before God, Lamson was sentenced to death.

One would think that so brutal a crime would alienate all sympathy, but after his conviction Lamson received daily presents of fruit and flowers from numerous women. That so many friends rallied round him demonstrates that there was a good side to the man. Numerous affidavits were filed as to his mental abnormality, insanity in his forebears was proved. Documents were sent from America testifying to his complete subjugation by drugs. Such was the universal clamour that the Home Secretary, Sir William Harcourt, postponed the execution for a further consideration. This only confirmed the justice of the sentence and the execution was fixed for April 28, leaving six weeks of mental anguish to Lamson after his conviction.

Deprived of his comforter, the morphine needle, Lamson crumpled under the strain and left a confession of his guilt. On the fatal morning he was carried to the scaffold and held on the drop by two warders. Vainly trying to snatch one more moment of life he begged the chaplain to recite just one more prayer. It was too late.

But the penalty for Lamson's crime had not been paid in full on that wet morning in April. Mrs. Lamson and her infant daughter were penniless, criminal counsels do not act in an honorary capacity. Some good friends enabled her under an assumed name to open a small boarding establishment near London. One day fate sent to her as a prospective boarder a member of the jury which had convicted her husband. The recognition was mutual. Soon after this Mrs. Lamson died in a little cottage in Devonshire. Mr. Bedbrook, the proprietor of the Blenheim school, was another victim. At the time of the death of Percy John the school was just getting on its feet and Mr. Bedbrook's prospects seemed for the first time in his life rather rosy. But all his hopes were dashed by the notoriety of the crime. The hordes of curious sightseers that came daily to view the school, unfavourably impressed the parents of the boys. The school went down and with it sank Mr. Bedbrook. He settled for a while in a London boot shop, but he sank lower. "His bad luck began that December evening in 1881 when Dr. Lamson offered Percy John a slice of Dundee cake. It ended in August, 1921, when the sea gave up its dead at Southsea."

AN IMPROVED TECHNIQUE FOR INJECTING THE THIRD DIVISION OF THE FIFTH CRANIAL NERVE.

By A. B. KEITH WATKINS, M.S. (London), F.R.C.S. (England),

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TREATMENT of trigeminal neuralgia by alcohol injections into the nerve trunks has not always met with the success that it should, for the following reasons:

1. The nerve trunks are often missed.
2. Contrary to Jonathan Hutchinson's teaching, many of these cases are due to focal infections within the distribution of the fifth nerve and if these be not eradicated, benefit from injection will not last long.
3. It is not sufficiently realized that several injections at short intervals are required in most cases to give relief for any length of time.
4. Patients are often not warned that injections will probably make them worse for a variable period.
5. That stronger solutions of alcohol than those usually recommended are required in obstinate cases.

The present paper deals with avoiding the error of missing the nerve trunk in the case of the third division of the fifth cranial nerve.

Many techniques have been described, but to date the best described has been that of Braun's.[1] He advises marking the point of insertion of the needle just below the middle of the zygoma. The needle is here inserted exactly horizontally (that is, when the patient is sitting up) and at right angles to the antero-posterior axis of the skull. At a depth of four to five centimetres the progress of the needle is arrested by the root of the pterygoid process. This indicates the depth of the *foramen ovale*, but this is situated one centimetre posterior to the point of the needle. The needle is therefore withdrawn as far as the subcutis and is then reinserted so that at the same depth at which it previously struck bone, it will be one centimetre posterior to that point. If the radiating pains do not occur it is permissible to insert the needle a few millimetres deeper.

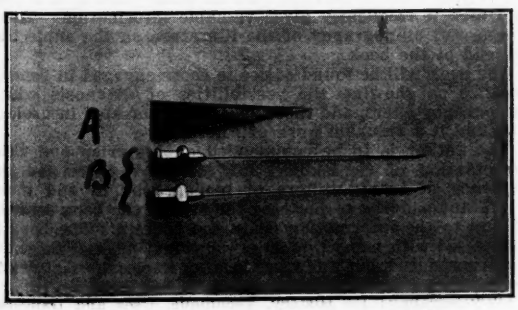

FIGURE I.
A = Brass protractor, indicating the angle of 13°. B = Stainless steel needles, at least seven centimetres long.

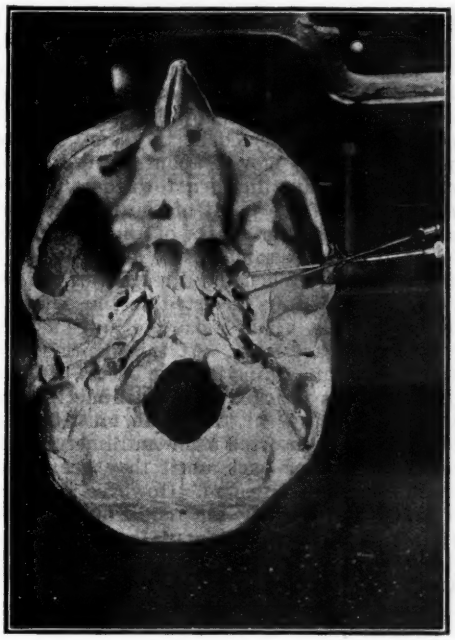

FIGURE II.
Showing the Needles in Position. The first one is not quite at right angles to the antero-posterior axis of the skull, as it should be.

This is an admirable method as it gets over the greatest bugbear of the procedure, namely, the difficulty of estimating the depth of the *foramen ovale*. In practice, however, it suffers from two objections:

1. It is not easy to mark the middle of the zygoma accurately, even on a dried skull, owing to its gradual merging into the malar bone.
2. Once the needle has been withdrawn, it is not easy to visualize what angle will be required at which to reinsert the needle.

The method I now describe is essentially Braun's method modified to overcome these disadvantages.

The instruments required (Figure I) are two equally long hypodermic needles at least seven centimetres in length and preferably made of soft rustless steel, so that they will bend rather than break and a strip of brass cut at the angle subtended by two needles whose points are one centimetre apart four and a half centimetres from the spot where they cross one another. This angle is 13°.

The patient is given a small hypodermic injection of morphine, 0·01 gramme (one sixth of a grain) is sufficient to allay nervousness in most patients without obscuring the paræsthesia that occurs when the point of the needle enters the nerve trunk.

The first needle is inserted immediately below the zygoma at a point three and a half centimetres anterior to the centre of the external auditory meatus. In an adult (and all these patients are adults) this is the middle of the zygoma and the error caused by the difference in size between various skulls will be less than the error of guessing the site of the middle of the zygoma. As in Braun's

technique the needle is now inserted horizontally and at right angles to the antero-posterior axis of the skull. At about four and a half centimetres depth the root of the external pterygoid process is struck. This needle is now left in position and the second one is inserted at the same spot below the zygoma. It is moved about until it is quite horizontal, the point directed towards an objective behind the site of the point of the first needle and the angle between the shafts of the needles is adjusted until it is the same as the angle on the little brass protractor. When the direction of the second needle is correct, it is inserted to the same depth as the first needle. This is easy to judge as needles of equal length are used. At this depth the characteristic radiating pains usually occur. If they do not, the needle is inserted a few millimetres deeper. If they still do not occur, the needle must be slightly withdrawn and reinserted a few millimetres further forwards or further back until they are obtained, when the solution is injected. However, this method is so exact that usually the trunk of the nerve is struck at the first insertion of the second needle. This will be appreciated by those who use other methods which generally leave them groping in the dark with only the knowledge that they are near their objective.

Reference.

(1) H. Braun: "Local Anæsthesia," Second Edition. English translation, 1924.

Reports of Cases.

LARGE TROCHANTER PADS, REQUIRING OPERATIVE REMOVAL.

By C. E. Corlette, M.D., Ch.M. (Sydney),
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Trochanter pads are protruding cushions of fat localized to the area over the great trochanter of the femur. They are said to be most common in young women, and to be evidence of ovarian deficiency. Whether they occur also in the male sex I cannot say. I am not deeply versed in the literature, and I have to admit that my knowledge is scanty.

In the case to be described below, there were trochanter pads of a size large enough to be conspicuous, and to be a cause of inconvenience to the patient when lying on her side.

Clinical History.

Mrs. E.T., aged thirty-nine years, was admitted to the Sydney Hospital on June 27, 1921. She complained of a tumour on the left thigh, which she had noticed in the past five months. It had been gradually increasing in size.

Her family history was unimportant. She was born in Sydney, and had lived there all her life. She had been accustomed to laborious household work. Ten years previously, both ovaries and tubes had been removed. One year ago she had had a severe attack of abdominal pain, associated with jaundice, the latter lasting about a week.

History of present trouble: She first noticed "soreness" in the left thigh when she rested on that side; she said there was an enlargement, but no tenderness. There was some pain in the limb on standing for a long time.

On examination, a tumour was palpable in the upper part of the left thigh on the lateral aspect, over the trochanteric area. The tumour was about fifteen centimetres (six inches) in diameter. It was firm, not tender, and not freely movable, but the skin was freely movable over it. It had not a sharply demarcated edge, but sloped gradually down towards its surroundings, and its height above the general level was only moderate. A smaller tumour was also palpable on the right thigh in a corresponding position, that is, over the trochanter. It seemed to blend, like the tumour on the left side, with the general tissue of the thigh. Still, both masses were quite conspicuously tumours.

Two days later she was operated on. Incisions were made over the tumours on both sides, and two large broad masses of fat were removed. The tumours were not circumscribed by a capsule, but were diffuse, and lay on the *fascia lata*. Five hundred and forty grammes (eighteen ounces) of fat were removed.

Comment.

I have practically nothing to add by way of comment except to remark that I have not been able to increase my information about trochanter pads by inquiry amongst my medical acquaintance. Perhaps some reader may enlighten us. But it may also be remarked that if trochanter pads are really due to absence of the influence of gonads, the connexion is hard to establish in the present case. A period of no less than nine and a half years intervened between the removal of the ovaries and the appearance of the trochanter pads. Still, it must be admitted that they occurred in a sterilized woman.

Reviews.

A TREATISE ON PYELOGRAPHY.

In his book[1] "Pyelography: Its History, Technique and Dangers," Alex. E. Roche deals with the subject in a most useful and practical manner. In his introduction to the book which is based on the work of the author at St. Peter's Hospital, London, Sir John Thomson-Walker stresses the following points: (i) That the method is not one for the occasional dabbler in cystoscopy. (ii) That the pyelogram, like any other X ray picture, requires considerable experience for its accurate interpretation. (iii) That the only patients who should be submitted to pyelography, are those about whose condition the information desired could not be obtained equally well by other less severe methods of examination. If these points are borne in mind, pyelography will be seen to form a most valuable aid to early and accurate diagnosis.

The author briefly reviews the history of the subject since its inception in 1904, the various materials used—"Collargol," thorium nitrate and others up to the present day when salts of the halogens are almost universally employed. He shows the reasons why sodium iodide is the most suitable solution chiefly because of its non-toxicity, cheapness, ready sterilization and especial opacity to X rays. The technique, reactions and contraindications are clearly set out and the author then discusses in detail the practical application of the method in investigating the various renal conditions such as stone, tumour *et cetera*, in which it frequently gives valuable information. There is a useful bibliography of the literature on the subject at the end of the book.

The book will be found of use to those engaged in general practice as showing the possibilities of diagnosis which pyelography offers, and those specially interested in urology will find it a valuable work of reference.

The author is to be commended on his crisp and clear presentation of the subject and on having resisted the tendency of many writers of monographs to add much irrelevant padding to increase the size of the book without adding to the information contained therein. The book is illustrated with many typical pyelograms; most of these are well reproduced, but a few are lacking in clearness of detail.

[1] "Pyelography: Its History, Technique, Uses and Dangers," by Alex. E. Roche, M.A., M.D., M.Ch. (Camb.), F.R.C.S. (England), with an Introduction by Sir John Thomson-Walker, O.B.E., M.B., C.M., F.R.C.S.; 1927. London: H. K. Lewis and Company, Limited. Demy 8vo., pp. 132, with illustrations. Price: 9s. net.

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A Problem in Pathology.

Many years ago Goldmann endeavoured to throw a new light on pathological problems when he worked out his methods of vital staining of tissues. His conception of some of these processes was that the biochemical changes were essential and led to structural changes either as a direct result of chemical action or indirectly by the effect of altered function. It is known that if some of the special cells of an organ are destroyed by physical or chemical means, the remaining unharmed cells will become more active or will reproduce themselves at an abnormally rapid rate to enable the tissue to assume a vicarious activity. Goldmann turned his attention more particularly to the strange affinity of the thyreoid gland for iodine. This work has been allowed to remain undeveloped to a large extent. It was found that it is intensely difficult to produce chemical reactions within the tissues during life by means of reagents introduced from without. Goldmann's early death and the paucity of facts on which to work are mainly responsible for the present position of this conception of pathological processes.

There appears to be a movement from another direction which is tending toward the same goal. The subject of goître was chosen for debate at the last session of the Australasian Medical Congress (British Medical Association), Dunedin. Professor C. E. Hercus has given an admirable *résumé* of his work which is teeming with interesting suggestions and facts. Before any progress can be made in regard to any disease, it is necessary to have an accurate and acceptable definition. It is impossible to discuss ætiology until the nature of the essential changes are known. The term goître is used to indicate any enlargement of the thyreoid gland. In his excellent paper read at the Congress Professor A. M. Drennan, following the lead given by Marine, gives a list of eight different forms of histological changes discovered in simple, toxic and exophthalmic goîtres. It is obvious that if goître may be characterized by atrophy or hyperplasia, colloid degeneration or fibrosis, the formation of adenoma or destruction by hæmorrhage, it is either a combination or group of diseases or the histological changes are secondary to some essential disturbance. Professor Hercus has proved quite clearly that there is a definite relationship between the iodine content of the soil and of the consumed food and the frequency of what is known as goître. Professor Drennan and his colleagues have estimated the iodine content of the thyreoid glands affected with the various forms of enlargement. They have produced sufficient evidence to show that the iodine poverty precedes the structural changes. If these two statements are true, it would seem that the result of a deficient supply of iodine would be in the first place a disturbance of the production of thyroxin, the iodine-containing hormone. The affinity of the secretory cells of the thyreoid alveoli for iodine does not seem to be lessened, for iodine given as medication in the early stages is always discovered at once in the gland. When the deficiency has lasted for a considerable time and the attempts to cover the needs of the body have eventually led to profound metabolic disturbance, the exhibition of iodine increases rather than reduces the symptoms. This evidently means that a stage has been reached in which the iodine affinity of the thyreoid cells has been altered. Professor Drennan's hypothesis as to what occurs in response to the iodine deficiency is ingenious and may be correct. It is certain that the demand for more thyroxin on the part of the body must result in a desperate effort to produce more. It is not unreasonable to suppose that the capacity for storage is increased or that the elements that elaborate the hormone, are multiplied or else that Nature fails in her efforts to compensate the defect. But neither increased storage capacity nor hyperplasia of the secreting elements can give the body a larger amount of normal thyroxin, for the fundamental iodine is wanting. Hyperplasia or colloid degeneration would thus become merely secondary indications of the biochemical disturbance.

The morbid anatomists will certainly resist this doctrine of the pathology of colloid or hyperplastic goître. Dr. A. H. Tebbutt has engaged in a duel with Professor Drennan on the significance of the histological changes of certain enlargements of the thyreoid gland. No one will dispute the possibility of the development of adenomatous or other forms of thyreoid tumours. Adenomata occur in all glandular organs, but their pathogenesis is obscure. The origin of simple and exophthalmic goître cannot be explained as physical or biological processes, at all events unless fresh facts are brought to light. Moreover the biochemical evidence cannot be brushed aside, for the work of Baumann, Goldmann and many others has been confirmed and amplified by the scientists of the Dunedin school. It is true that much more evidence is needed before the doctrine can be removed from the sphere of hypothesis and placed in the book of proven facts. The essential evidence will be very difficult to adduce. If some means could be discovered to measure the iodine hunger of the alveolar cells during iodine starvation, it might be possible to reproduce the biochemical conditions in such a manner that colloid degeneration or hyperplasia of the secretory cells could be produced at will in laboratory animals. At the present stage the weight of evidence is in favour of the hypothesis that goîtres are the result of iodine deficiency and that the type is determined by the response of the gland to the demand for more thyroxin.

Current Comment.

EXTRAMEDULLARY HÆMATOPOIESIS IN ANÆMIA.

Although during fœtal life the blood cells arise in the lymphoid tissues and in the fœtal bone marrow, changes occur after birth in the hæmatopoietic organs. The lymphoid tissues and to a certain extent the bone marrow give rise to lymphocytes and the bone marrow is a source of the red cells. The structure of the lymphoid tissue is not so complicated as that of the bone marrow and the latter is subject to profound alterations. In early fœtal life the bone marrow consists of embryonic tissue and when ossification begins, this tissue invades the cartilage of the long bones and the fibrous tissue which precedes the flat bones. By the third month of fœtal life the tissue in question contains the primitive leucocytes and erythroblasts. Fat is deposited in the fibrous tissue and with the islets of leucoblastic and erythroblastic tissue constitutes the red bone marrow. After birth the source of supply adjusts itself to the demand, the hæmatopoietic function of the marrow in the long bones is held in abeyance and it becomes what is known as yellow marrow. The red marrow is found in flat bones and in the extremities of the long bones. In normal health the red marrow in these situations is able to supply the demands of the body. The red marrow responds readily to stimuli, it becomes more vascular and thus more productive. The stimulus may provoke either an erythroblastic or a leucoblastic reaction and if the stimulus is of sufficient magnitude, the yellow marrow may resume its temporarily lost function.

It has been pointed out recently by Dorsey Brannan that the extent to which this reaction may go is not always realized.[1] He has reported fully the clinical histories and *post mortem* findings in two cases of anæmia; one patient was a child and the other was an adult. In both instances extramedullary masses of hæmatopoietic tissue were found. Brannan has tried to review all available cases of so-called von Jaksch's anæmia, *anæmia pseudoleuchæmia infantum,* splenic anæmia and pernicious anæmia of infants. According to most authors this type of anæmia is found in infants and children manifesting signs of syphilis, tuberculosis, rickets or other chronic diseases. Lehndorff regards the disease as a type of myelogenous leuchæmia. Brannan points out that most authors do not accept this view and he holds that it is incompatible with the facts as revealed by a study of the reported cases. He states that because of the preponderance of clinical details in contrast to the paucity of pathological data on the anæmias of infancy and childhood, it is apparent that relatively little is known regarding their pathology. A digression may well be made to emphasize the truth of this and the usefulness of recording pathological findings even in isolated cases.

Brannan finds that in the vast majority of cases of this infantile anæmia which have been recorded, there has been some evidence of extramedullary blood formation. The spleen has generally been described as enlarged, hard and firm and affected by perisplenitis. In some cases fibrosis has been present and the lymph follicles have been small and inconspicuous. On microscopical examination there has frequently been found a fibrosis, characterized by an increase in the fine reticular and trabecular framework and a perivascular increase in the connective tissue. In such instances the lymph follicles were small and the pulp cells were relatively reduced. Slight and more moderate changes were sometimes found and in these circumstances the most frequently observed cells were normoblasts and eosinophile cells. The liver is often found to be enlarged and pale and many authors have found signs of slight hæmatopoiesis. In the lymphatic glands enlargement due to hyperplasia of the follicles has often been observed. The red colour has generally been accounted for by the presence of

[1] *Bulletin of the Johns Hopkins Hospital,* August, 1927.

blood formation. Brannan attributed the red colour in his case to circulating blood in the blood sinuses. In the thymus active blood formation has been observed. In the bone marrow the most common finding has been an increase in the erythrocytic elements. At the same time sclerosis of the marrow has been reported. In the kidneys large tumour-like masses of red hæmatopoietic tissue have been found in several instances.

The child whose history is described by Brannan, was seven and a half months old when he came under treatment and he died a month later. The clinical picture was that of von Jaksch's anæmia with splenomegaly, large liver, associated with rickets and malnutrition. The blood picture was characterized by the presence of a large number of normoblasts and by an increase in early myeloid cells. In the stained smears 335 nucleated red cells were found to every 500 leucocytes. The nuclei of the red cells were very irregularly lobulated and occasional cells were seen to be in apparent mitosis. Several unusual features were discovered at autopsy. Not only were the red tumour-like masses previously mentioned found in the hilus of each kidney, but the marrow of the cranial bones contained bosses of red material involving the outer table and the diploë. In the *falx cerebri* also there was found abundant red tissue which consisted of all the elements of hyperplastic bone marrow, and which manifested a great predominance of erythrocytic cells. Brannan believes that no previous findings of a similar nature have been recorded with reference to the *falx cerebri*. His conclusions in regard to the condition are that the child was rhachitic and that it was suffering from a secondary but actively proliferating change in the hæmatopoietic apparatus. The agent causing the hæmatopoietic reaction remains obscure.

The second patient described by Brannan was a young woman, aged twenty-seven years, who was admitted to hospital suffering from bleeding from the uterus following an attempted abortion. She eventually died of septicæmia. The secondary anæmia produced a stimulation of the bone marrow. Compensatory blood formation was seen to be occurring in the organs and in the broad ligaments. In the latter situation nests of nucleated red cells and a few intermingled megaloblasts were especially common in the small groups and occasional patches of blood-forming cells which were lying in the edges of organized thrombi.

In discussing these findings Brannan states that when a widespread destruction of the bone marrow has occurred, it is not difficult to conceive a compensatory growth of blood-forming tissue which had this function during fœtal life. When the bone marrow is very active it is logical to assume that the marrow was unable to keep pace with the rapid blood destruction. In other words this is a reversion to the fœtal type of blood formation. It must be admitted at once that such a conclusion as this leaves out of consideration the question of the nature of the agent which causes the reversion to take place. That such a reversion can take place will easily be understood when the origin of the primitive blood cell from the primitive mesenchymal cell is remembered. Reference was made to this question in a recent issue in connexion with the subject of aleuchæmic leuchæmia. After all the phenomenon under discussion is only another example of the remarkable provision of Nature for the defence of the body, which has been mentioned in our previous article.

RUPTURE OF THE SPLEEN.

AMONG the abdominal catastrophes which the surgeon has to face, rupture of the spleen as a result of trauma occupies an important place. The spleen, like the liver, is relatively well protected by the ribs; if it were not so, rupture would be much more common than it is. The frequency of this lesion may be gathered from the fact that between 1894 and 1926 thirty-two patients so affected were admitted to the London Hospital. These thirty-two cases have been reviewed by Hamilton Bailey.[1] He points out that in every case the history of the violence was quite clear. Fourteen were due to street accidents, seven to a fall on to a projecting object, three to a kick in the abdomen, three to a fall from a height, three to a compression accident and two to falls over the handle bars of a pedal cycle. In addition to this type of rupture of the spleen there occurs what is known as spontaneous rupture. This subject has been discussed by M. P. Susman.[2] He points out that spontaneous rupture of the abnormal spleen has been the subject of frequent communications. It is obvious that disease of the spleen, especially if associated with enlargement of the organ, will render it more liable to rupture. In fact Susman refers to the statement of Berger that of 123 spleens ruptured by injury 93 were found to be affected by malaria. He then turns his attention to spontaneous rupture of the apparently normal spleen. This is rare and he has been able to collect only six cases in addition to the one which has come under his own notice. The patient in this instance felt a sudden pain when he bent down to lift a bucket of water. After removal the convex surface of the spleen was found to be the site of a hæmatoma almost as large as the organ itself and there was a tear in the capsule. No other abnormality was found in the organ. The patient had complained of flatulence and indigestion for some three months. Susman draws attention to this fact in discussing the view of Ledderhose and Fourcault that spontaneous rupture occurs only in the diseased spleen. Space will not permit discussion of the other six cases referred to by Susman. In his case it is justifiable to presume that the hæmatoma of the convex surface of the spleen was present before the patient stooped to pick up his bucket and that the act of stooping was trauma that occasioned the rupture. The rupture was then not "spontaneous." Apparently "spontaneous" rupture may be due to a condition described by Bailey in which the signs of rupture are delayed. Such histories are not by any means uncommon.

[1] *The British Journal of Surgery*, July, 1927.
[2] *Ibidem.*

Abstracts from Current Medical Literature.

OPHTHALMOLOGY.

The Relation of the Nasal Ganglion to Glaucoma.

Hiram Byrd (*Achives of Ophthalmology*, March, 1927) endeavours to prove that the nasal ganglion is the important nerve centre in glaucoma. Dysfunction of this ganglion produces hypersecretion of aqueous, one of the factors in the onset of high tension. Sluder reported that after the nasal ganglion on the right side was cocainized, the eyelid dropped and the pupil contracted to half the size of its fellow. He deduced from this that through the nasal ganglion must pass a large part of the sympathetic supply of the iris and ciliary body. Pathological currents reach the eye only *viâ* the nasal ganglion of the same side and can uniformly be intercepted at the ganglion by cocainizing it. Several cases of glaucoma are described in which the main treatment was cocainization of the nasal ganglion. The author believes that when these facts are appreciated, iridectomy and trephining will be a thing of the past. Alcohol injection of the ganglion will have a more permanent effect.

Protection of the Eyes by Reflecting Glasses.

J. Imre, Junior (*Archives of Ophthalmology*, March, 1927) considers that the defect of most protecting glasses is that they do not give protection against heat rays and that even some of the visible rays will be lengthened and changed to heat rays, producing an accumulation of heat behind the glasses. It is desirable that superfluous and harmful rays should be held back from the eyes not by absorption, but by reflection. Very thin metallic layers are transparent and possess high reflection ability. A silver layer of one-fifteen millionth millimetre looks like a silver mirror, though it lets through 32% of the blue and violet rays. Gold acts as a yellow and platinum as a grey mirror. Heat rays of about 1000$\mu\mu$ are checked by platinum in 73%, by gold in 95% and by silver in 97%, almost exclusively by reflection. The wearing of such glasses is very agreeable because of a feeling of coolness before the eye. They are beneficial in iritis.

Posterior Lenticonus.

E. J. Marsh (*Archives of Ophthalmology*, March, 1927) reviews the literature on posterior lenticonus of the days before the advent of the slit lamp and then describes certain points brought out by the examination with the slit lamp. Some thirty-eight cases have been recorded, but Colombo has rejected all but twenty-nine by defining the condition as a congenital, transparent hemispherical prominence, circular in outline, superposed on the posterior pole of an otherwise normal lens. The diagnostic signs were the luminous disc in the centre of the lens, the "oil drop" phenomenon surrounded by a shifting dark line and the increased myopia of the central part as compared with the periphery. In many of the reported cases more or less opacity was present and in many hyaloid remains were seen. Three hypotheses have been advanced to account for its origin, increase in the volume of the lens, hernia of the cortex through a gap or weak spot in the capsule and traction at the pole during fœtal life by the hyaloid vessels. The condition is congenital or has developed very early in life; changes in the embryonal nucleus belong in the category of "false lenticonus." Four patients have been studied with the slit lamp. The nucleus is normal in form and position. A striking feature is Vogt's ring-reflex, like a brilliant ring of fire at the edge of the conus. The author gives details of the findings in a patient of his own.

Treatment of Syphilis of the Eye.

J. H. Stikes (*Archives of Ophthalmology*, May, 1927) in discussing syphilis in the eye lays down the principle, that treatment should not be begun with shock producing drugs such as "Arsphenamine" until the entire condition of the patient with reference to syphilis has been fully evaluated by a complete examination. He also holds that syphilis of a special structure should be treated as systemic rather than as local syphilis. Treatment with "Arsphenamine" does three things. It produces a flare-up of the process when first given which may seriously damage a vital structure, it causes hypersusceptibility and fulminating relapse if stopped too soon and produces healing with fibrosis so rapidly as to preclude time for functional adaptation. Patients with acute lesions of the eye should therefore have preparations with slower acting drugs and graded "Arsphenamine" dosage to produce a more gradual subsidence of the acute phase. The rapid destruction of spirochætes by "Arsphenamine" leaves the patient without defence normally produced by their presence or by the action of a resistance stimulating drug, like mercury. Therefore should the "Arsphenamine" not be continued and the destruction of spirochætes not be complete and if relapse occurs which may be violent and intractible, the ophthalmologist is apt to blame the drug, whereas the trouble is that not enough "Arsphenamine" has been given. Damage by fibrosis in too rapid healing is to be avoided by prolonged preparation with slow acting, non-fibrosing drugs. Slow initial action and ultimate great intensity of treatment secure the best results and are learned only by experience. Experience of 100,000 injections of "Arsphenamine" support the comparative innocuousness of these drugs if they are intelligently used in syphilis of the eye. The only exception is in simple syphilitic atrophy of the optic nerve. Under-dosage at irregular and over long intervals and an insufficient series of injections form the explanation of many disappointments, failures and relapses. Mercury should be used either as an intramuscular injection every day or in the form of the soluble salt for inunction. Mercury by the mouth has no longer any place in the treatment of active syphilis of the eye. Bismuth is a better spirillicide than mercury, but inferior to "Arsphenamine." To produce penetration of the iodides into inaccessible parts of the body like the nervous system, a high blood concentration must be obtained by the use of large doses given by mouth and intravenous injection. For ten years the author has seldom prescribed less than one gramme (fifteen grains) of potassium iodide three times a day. He has usually used three grammes, not infrequently six grammes and at times as high as fifteen grammes and even thirty grammes three times a day. Intravenous administration of sodium iodide has proved a valuable aid. Ophthalmic surgeons have been backward in using modern intensive methods in interstitial keratitis. The second eye should not be involved except in a small percentage of cases.

Intracisternal Injections in Luetic Optic Atrophy.

S. R. Gifford and J. J. Keegan report the later results in six previously published cases of optic atrophy treated by intracisternal injections and give their experience in eight additional cases (*American Journal of Ophthalmology*, May 1927) The dosage of mercuric chloride should not exceed five milligrammes or 0·1 cubic centimetre of a one in two hundred solution, which is diluted with fifteen to twenty cubic centimetres of cerebro-spinal fluid. Each injection is followed by an intravenous injection of "Neo-arsphenamin." Three injections should be given six weeks apart. Several fatalities reported by other writers have been due probably to faulty technique. Of the six patients treated in 1923, the sight of one failed gradually, but remained stationary with vision of 20/200 after three years. One was lost sight of. The condition of the other four remained stationary with useful vision. With the experience of a further eight cases the authors conclude that there is a certain body of evidence favourable to the subdural methods of treatment and that because of it there is no justification for a "hands off" attitude towards tabetic optic atrophy when useful vision is still present. Cisternal injections present distinct advantages over intraspinal treatment.

Pathology of Spindle-Shaped Pigmentation of the Posterior Surface of the Cornea.

F. Ed. Koby (*Révue Générale d'Ophtalmologie*, February, 1927) relates the observations of previous authorities on the pathology of spindle-shaped pigmentation of the posterior surface of the cornea beginning with those of Krukenberg in 1889. The latter described in a woman of forty-

five with nine diopters of myopia a brown colouration in the centre of the cornea in the form of a vertical oval. The brown was darkest in the centre and thinned out towards the periphery. The tone corresponded to that of the iris and the pigmentation was limited to the posterior layers, practically the posterior surface. There were no traces of precipitates nor remains of the papillary membrane, yet Krukenberg considered the condition congenital on the supposition that before the formation of the anterior chamber and when the papillary membrane was pressed against the cornea, a passage of pigment had taken place. He admitted that he could not explain the absence of papillary remnants. After referring to cases reported by Stoek, Hess, Vogt, Cardell and others, the author presents two cases of his own. The first was a single woman of forty-four with emmetropic eyes. She had iritis in both and left hospital with a few synechiæ, corneal precipitates and vitreous opacities. Five months after the onset there was present in the right eye a spindle-shaped pigmentation on the posterior surface of the cornea measuring four by two to three millimetres, brown in colour, like the iris. With the slit lamp the endothelium was not seamy, but the pigmented granulations appeared as minute black spots. There was a similar appearance in the left eye. Vision was moderate, 0·8 and 0·7. This observation demonstrates Krukenberg's spindle appearing after an iridocyclitis. It is built up not by the usual precipitates, but by the deposit of pigmented granules. The second patient was a man of twenty-nine with two diopters of myopia. With the slit lamp the posterior surface of the cornea was seen to be sprinkled with fine pigmented granules except at the periphery. Six months later the granules were increased in number especially in the right eye where they assumed the form of a spindle 4·4 by 2·0 to 3·0 millimetres with vertical axis. These two cases show that the condition can be acquired. Some cases associated with papillary remnants are congenital, but when the pigmentation assumes true spindle shape, the condition is acquired. For their production two factors come into play; the physiological current of thermic origin in the aqueous humour and secondly a disintegration of pigment.

OTOLOGY.

Early Meningitis Associated with Otitis Media.

O. MAYER (*Wiener Medizinische Wochenschrift*, May 28, 1927) discusses the causation of meningitis immediately following the onset of *otitis media*. Many observers consider that the meningitis is due to a spread of infection by the blood vessels passing into the middle cranial fossa from the middle ear. This rare complication would be more common if this were the real cause. Other authorities consider it to be due to thinning of the roof of the tympanic cavity which is mainly congenital in origin. There is a poor blood supply in this area and as these lacunæ are often found *post mortem*, the risk of spread of infection by this means is not great. Lacunæ, however, occur which are not of congenital origin, but are due to erosion caused by increased intracranial tension. Mayer gives the history of such a case. The patient complained of sudden earache. There was redness of the tympanum, but no involvement of the mastoid region. Paracentesis was performed and a little bloodstained serous fluid escaped. A few hours later severe headaches occurred and death took place within ten hours. *Post mortem* examination revealed a suppurative meningitis mainly over the petrous portion of the right temporal bone. Cultures yielded the pneumonia bacillus and similar results were obtained from the cultures of the bronchial secretions. Acute inflammation was present in the right tympanic cavity and in the air cells of the mastoid process. In addition there were lacunæ in the bony roof and the mucous membrane of the cavity was in direct contact with the meninges. These defects were not congenital, but were caused by increased intracranial tension. While it is not practicable to submit every patient to radiological examination, the author maintains that the possibility of this complication should be considered when severe headaches persist in spite of paracentesis. Lumbar puncture should be done and if abnormal findings result an immediate operation should be performed.

The Treatment of Furunculosis by Ionization.

F. H. B. NORRIE (*Journal of Laryngology and Otology*, February, 1927) describes his technique for treatment of aural furunculosis by ionization. He claims success in every case for the past three years, even in boils which have already come to a "head." The most striking feature is the quick allaying of the intense pain usually suffered. The auricle and canal are first cleansed of all *débris* and grease. The canal is then packed lightly with gauze and the irregular surface of the auricle also. This gauze is saturated with a 2% solution of sodium salicylate and a saturated woollen pad is placed over the mastoid process and auricle. The negative plate is then firmly bandaged to this area and the positive plate applied to an arm or a leg. The current is slowly increased up to five milliampères and left thus for fifteen minutes to allow the skin to become accustomed to the ionic action. The current is then further increased up to thirty milliampères and left at this strength for two hours, when it is slowly decreased. The gauze is removed five hours later. Patients usually sleep during the treatment and find that all pain has ceased afterwards. It is exceptional to have to give a second application. Examination of the ear afterwards shows the swelling to have subsided to a considerable degree and the furuncular area to be insensitive to probing and to subside rapidly without suppuration. The author suggests that this form of treatment should be of benefit in the differential diagnosis between a furuncle of the posterior auricular wall and mastoiditis, as he has never seen the œdema of mastoiditis reduced by ionization.

The Treatment of Middle-ear Deafness by Radium.

WALTER C. STEVENSON and T. G. WILSON (*Journal of Laryngology and Otology*, February, 1927) describe their results in the treatment of middle-ear deafness by radium and the technique adopted. The power of radium to reduce fibrous tissue or to arrest the chronic inflammatory processes in other parts of the body suggested to the authors this method of treatment for middle-ear deafness. The radium is applied in capillary tubes, giving off γ rays only. The tubes are placed one millimetre from the drum head in the external auditory canal and are left *in situ* for twenty-four hours. Both ears are treated simultaneously. After-treatment consists of catheter inflation only three times a week. Eight patients have so far been treated and the history, physical examination and radium dosage and reaction of each are given in detail. Of the eight, five manifested definite improvement of hearing after one application of radium; one improved only after a second application six weeks later; one manifested no improvement, but in this case it was suspected that the tubes were interfered with by the patient; one did not report back after treatment. The radium reaction lasts from ten to fourteen days and benefit from its application is noted to increase up to five months afterwards.

A Self-retaining Antrum Catheter for Drainage and Irrigation of the Maxillary Sinuses.

N. JOSEPH MANDELBAUM (*The Laryngoscope*, February, 1927) describes a self-containing antrum catheter for irrigating the maxillary antrum after an intranasal opening under the inferior turbinate has been made. The catheter is made of a soft rubber eight centimetres long and French size twelve in diameter. The antral end has two lateral wings with fenestra which permit the largest drainage opening consistent with strength. A special introducing stilette is used with a clip on the handle to hold the catheter on the stretch while it is being inserted through the antral opening. This stretching obliterates the wings of the catheter, allowing easy passage. The wings keep the catheter *in situ* when the stilette is removed. When not in use, the free end of the catheter is tucked back upon itself into the nose, causing no discomfort. The catheter can be left *in situ* for lengthy periods without harm and is especially useful in the treatment of children, as it enables daily irrigation to be carried out painlessly at home.

British Medical Association News.

SCIENTIFIC.

A Meeting of the Queensland Branch of the British Medical Association was held on August 5, 1927, at the B.M.A. Building, Adelaide Street, Brisbane, Dr. H. V. Foxton, the President, in the chair.

Puerperal and Post-Abortion Sepsis.

Professor J. C. Windeyer, of the University of Sydney, delivered the Joseph Bancroft Memorial Lecture, taking as the subject of his address: "Puerperal and Post-Abortion Sepsis" (see page 462).

Sir David Hardie, in proposing a vote of thanks to Professor Windeyer for his very interesting and instructive address, said that the subject of puerperal and post-abortional sepsis was a most important one, chiefly on account of the great number of medical men who were engaged in the practice of obstetrics. He wished to congratulate Professor Windeyer very heartily on the admirable and very able manner in which he had presented his address. His own experience, he said, went back to the time of the now famous Joseph Bancroft, in whose honour the memorial lecture had been established and he could not help making a comparison between those days and the conditions obtaining then and the advantages of the modern student who was privileged to be trained and instructed by men of the type and knowledge of Professor Windeyer. However, despite the greater knowledge and improved methods of modern times, he did not consider that the actual maternal and infantile mortality and morbidity was much less in these days than it was in the old days. He then referred to the use in those days of vaginal and uterine douches in the treatment of puerperal sepsis and deprecated very strongly the use of the intrauterine douche in such cases. He was of the opinion that much more patience should be practised in obstetrics if they were eager to achieve anything worth while in the control of puerperal sepsis. He thanked Professor Windeyer heartily for coming so far to lecture to the Branch on such an important subject and expressed his appreciation of the value and use of his lecture. It gave him very much pleasure to move a vote of thanks to Professor Windeyer.

Dr. J. A. Cameron was eager and pleased to second the vote of thanks proposed by Sir David Hardie. He paid a tribute to Professor Windeyer for what he called his practical tuition in obstetrics and said that this was well exemplified, not only in the present most instructive and practical address, but also in a paper that Professor Windeyer had recently read in Melbourne on the interesting subject of puerperal eclampsia. He had much pleasure in seconding the vote of thanks to Professor Windeyer.

Dr. F. L. Apperly thought it rather difficult for him personally to appreciate the lecture at its full value on account of his not being in general practice. He was glad to see that the big problem of maternal mortality and puerperal sepsis was being tackled the right way in Melbourne under the guidance and control of a distinguished Queensland medical man, Dr. R. Marshall Allan. He then mentioned the recent attempt to establish a Chair of Obstetrics in Melbourne. This, he said, had been subsequently changed to a Chair of Medical Sciences which would control and coordinate the main branches of medicine. He wished to add his quota of thanks and congratulation to Professor Windeyer.

Professor Windeyer, in reply, referred to the great hospitality and kindness which had been extended to him by his Brisbane hosts during his short stay in that city. He felt there had been some flattery of his little effort on the part of the proposer and seconder of the vote of thanks and expressed much pleasure at the satisfaction his paper had apparently given to the members of the Queensland Branch. He wished to thank the Council of the Branch for the great honour they had conferred on him in asking him to deliver that year's Bancroft Memorial Lecture, an honour which he fully appreciated. He thought that some of the aspects of puerperal and post-abortional sepsis he had mentioned in his address, were most important from the view-points of both the general public and the medical profession. He wished in conclusion to thank all present for their appreciation of his lecture and also all his Brisbane friends and colleagues for their great kindness to him during his visit to their city.

A Meeting of the Tasmanian Branch of the British Medical Association was held at the Royal Society's rooms, Hobart, on September 13, 1927, Dr. F. Fay, the Vice-President, in the chair.

Tumour of the Tibia.

Dr. F. Fay read the history and exhibited a pathological specimen which had been removed at surgical operation from a girl, aged nine years. The parents had stated that they had noticed a swelling on the medial side of the child's right knee for about four years. Two years previously an operation had been performed at a public hospital, but the nature of the operation was unknown. It appeared that an incision had been made over the swelling and that the wound had been allowed to granulate. No discharge had been present and the swelling had been the same after as before the operation.

When Dr. Fay first saw the patient he had considered that it was necessary to have a microscopical examination of a section made before arriving at a diagnosis. This had been done after an X ray examination was made. The radiologist had reported that the joint itself appeared to be in a healthy condition, but that there was a disease present on the inner side of the tibia; there was a definite swelling in the soft tissues just below the epiphyseal line on the inner side and the periosteum covering the tibia on its inner side was thickened; there was also some slight deposition of new bone. In the opinion of the radiologist the condition had been suggestive of chronic periostitis with possibly an acute abscess developing in the soft tissues. Sections, however, had been cut by Dr. J. Walch who had reported the presence of a mixed cell sarcoma. After consultation the leg had been amputated above the knee and as much stump as possible had been left. The wound had healed well and the patient had made an uninterrupted recovery.

Six months later Dr. Fay had noticed a swelling on the opposite ankle. In spite of rest the swelling had broken down and an ulcer suggestive of luetic infection had formed. The blood had given a strongly positive response to the Wassermann test, it had deviated eight minimum hæmolytic doses of complement. This condition had healed rapidly under antisyphilitic treatment.

Dr. J. Walch exhibited sections of the growth under the microscope and also macroscopical sections of the tumour which demonstrated very clearly the typical irregular wavy epiphyseal line of syphilitic infection and also the added amount of spongy bone present. He gave his reason for supporting his diagnosis of sarcoma as against the possibility of its having been a gumma. He pointed out that it contained some giant cells of the type found in sarcoma with a few large nuclei of the "Dorothy Reed" type and said that when giant cells occurred in a gumma, they were of the foreign body type as in tubercles. In addition mitotic figures were present and the surrounding tissues were infiltrated. Fibrous tissue was absent. He also referred to the vascularity of the tumour. There were numerous young thin walled vessels contrasting strongly with the old thick-walled vessels of the infiltrated tissue. A gumma was very poorly supplied with blood vessels which were surrounded by fibrous tissue. Hæmorrhagic necrosis was present, the dead tissue in the centre of the tumour was infiltrated with red cells. In a gumma central necrosis resulted from the cutting off of the blood supply by the growth of fibrous tissue and the necrotic area was anæmic. In Dr. Walch's opinion the specimen manifested the dual condition very clearly.

Dr. Fay then read notes on the differential diagnosis of swellings of bones which, he said, all had to be con-

sidered in the case under discussion. The swellings could be classified as follows:

1. Swellings due to injury. As a rule a blow caused an extravasation of blood under the periosteum which disappeared later, but often left a permanent thickening. Unrecognized fractures, especially those of the green stick variety, had to be considered.

2. Swellings due to infective disease. Swellings might be caused by periostitis or osteomyelitis as the result of infection by the pyogenic group of organisms; they might also be caused by tuberculosis and syphilis. *Erythema nodosum* had occasionally been mistaken for one of these conditions. Tuberculous disease usually started in the cellular tissue of small bones and exhibited a fusiform swelling; slight tenderness was present, but this tended to diminish with rest. Tuberculous periostitis might occur on the long bones. Chronic tuberculous abscess in young adults was usually found at the articular extremity of the bone. Acquired syphilis might lead to periosteal thickenings in the second stage and to gummata in the tertiary stage. The former gave rise to excessively tender swellings on the tibiæ, clavicles, sternum, ribs or skull. Relief was afforded almost at once by the administration of iodides. Gummata might form localized swellings or they might invade the whole of the bone. In the congenital form two types of swelling were common: (i) Periosteal thickening of the bones of the wall of the skull, Parrot's nodes, (ii) epiphysitis and separation of the epiphyses in new born infants. A limb affected in this manner was so painful that it was kept motionless and might be thought to be paralysed. In enteric fever periosteal nodes and abscesses might occur; these would yield pure cultures of *Bacillus typhosus*.

3. Swellings due to general diseases. Swellings might be due to rickets or to scurvy-rickets which was more common among the well-to-do. In *osteitis deformans* the whole osseous system was involved, but the first lesion was frequently noticed in the tibia.

4. Innocent or malignant tumours. Osteomata or exostoses were commonest in the neighbourhood of the epiphyseal line. Chondromata might grow from any bone; they were commonly multiple and affected the phalanges and metacarpal bones. Fibromata grew from fibrous tissue of the periosteum and were rare, except in the form of epulis of the jaw. Lipomata were also rare, they sprang from the outer layer of the periosteum. Malignant tumours might be primary or secondary. Periosteal sarcomata were of varying types and of varying degrees of malignancy. The softer their consistency and the nearer they approached to the embryonic type of tissue, the more malignant they were. With the first type the veins were prominent, the glands became enlarged, metastases occurred early, especially in the lungs and amputation was rarely successful. The second variety, namely the endosteal or myeloid sarcomata, were of much slower growth, were prone to affect the long bones, particularly the lower end of the femur and the upper end of the tibia, the upper end of the humerus and the lower end of the radius and also the sternal end of the clavicle and the upper jaw (malignant epulis). This variety was amenable to treatment by amputation and metastasis did not occur until the later stages.

5. Swellings due to cysts. Under this heading were included blood cysts and hydatid.

A MEETING OF THE SECTION OF OTO-RHINO-LARYNGOLOGY OF THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the B.M.A. Building, 30-34, Elizabeth Street, Sydney, on July 12, 1927, DR. R. S. GODSALL, the Vice-Chairman, in the chair.

Surgery of the Ethmoid.

DR. C. A. VERGE read a paper entitled: "The Surgical Approach to the Ethmoid" (see page 469).

DR. T. SPIERS KIRKLAND in opening the discussion welcomed the intrusion of something new in the surgical treatment of the ethmoid. He congratulated Dr. Verge upon the value of his paper.

Dr. Kirkland traversed the many methods which had been adopted during the last twenty-five years, to insure the safe removal of all involved cells. In his opinion ethmoidal suppuration was nearly always associated with suppuration of other sinuses, the frontal and sphenoidal and also the antrum. He described a method mentioned by Ballenger for intranasal removal of all the diseased cells in the ethmoidal labyrinths by a special knife.

This method seemed to him unsafe, but if successful produced an excellent result. It involved not only a minute knowledge of the region in question, but also special skill in its performance. Professor von Eicken had introduced an operation similar to that described by Dr. Verge, but with this difference, that the incision was prolonged downwards over the ascending spinous process of the superior maxilla. This afforded a good view of the whole labyrinth and total removal of the cells could be made certain. He mentioned that at the Australasian Medical Congress, held in Melbourne in 1923, he spoke of having performed total ethmoidectomy through the natural ostium of the superior maxilla. When operating for antral suppuration, if he wished to operate through the nose only without any external incision, he found that a special pair of heart-shaped forceps which he possessed, could accomplish this end, but he had to admit that it left him with the idea that some cells might have escaped. He thought that nearly all polypi were due to ethmoidal suppuration. Their removal intranasally without entering the ethmoid was unsound and meant that other operations would be required at a later period. The cause should be sought in the ethmoid and cells exenterated. Sometimes only the posterior cells were affected, at other times only the anterior.

The difficulty in all intranasal operations was the narrow area in which to work. This seemed applicable also to the method of approach advocated by Dr. Verge. Hæmorrhage in this latter case also made the view of the field of operation most difficult and there was the danger of leaving diseased areas behind. He would ask Dr. Verge whether the size of incision he made allowed him sufficient space in which to work.

In referring to the difficulty of localizing the seat of infection in nasal conditions, Dr. Kirkland instanced the case of a girl, who had complained of constant headache. He had removed the middle turbinal to find it full of pus of which there was no evidence on examination. In 1904 he had examined *post mortem* one hundred cases in the Sydney Hospital. Death had resulted from pneumonia in forty-five instances and in twenty-five there was evidence of pus in the cavities of the head. Of the infections in the other head cases two showed gangrene of the lung with a purulent dark-coloured fluid in the sphenoidal sinus. He considered it probable that the discharge from the sinus in these two cases produced a secondary infection in the lung. In one case of infection of the kidney pus found in the urine had contained *Staphylococcus aureus* and this same organism had been discovered in the mastoid.

Returning to Dr. Verge's operation he considered that the incision should be a little larger to allow of a better view not only of the anterior, but also of the posterior ethmoidal cells as in the von Eicken operation.

In reply to a question by Dr. Verge who had found no mention of the von Eicken operation in the literature as to where the information could be gleaned, Dr. Kirkland said that he did not think that von Eicken had published anything on the matter.

DR. HERBERT MARKS thanked Dr. Verge for the description of his operation and hoped that the paper would stimulate a keen discussion on this important subject. He considered that the majority of cases of chronic ethmoidal disease could be dealt with intranasally. It was imperative, when attacking this region, that the operator should have perfect orientation, working backwards below the attachment of the middle turbinate and below the level of the internal canthus of the eye. The complete removal of polypi and diseased ethmoidal cells might necessitate several sittings under local anæsthesia on account of hæmorrhage and the surgeon should be guided always by touch and sight, with good illumination.

The instruments he used for this operation after removal of polypi and the middle turbinate with forceps and snare

were Grünwald's punch forceps, Lac's or better still Herbert Tilley's ethmoidal forceps and Meyer's ring knife curette.

Cases, however, were met with at times of recurring polypi and pus after an apparent complete removal of polypi and diseased ethmoidal cells which could not be dealt with effectually by the intranasal route. These obstinate cases were due to the presence of outlying galleries of cells situated behind the orbit and below the floor of the frontal sinus. In such cases an external operation was necessary to destroy effectually the diseased cells.

The incision for entering the ethmoidal labrynth, described by Dr. Verge, seemed to be too high up and above the lateral mass of the ethmoid. It would be better to continue this incision downwards in front of the internal canthus of the eye, curving slightly outwards down the side of the nose to the inner border of the infra-orbital margin, having the internal canthus at about the centre of the incision. By this incision the lateral mass of the ethmoid might be entered. When the muscles and periosteum and lachrymal sac had been carefully retracted, a small portion of the upper end of the nasal process of maxilla should be removed, also the lachrymal bone and *os planum* in order to attack the whole of the lateral mass of the ethmoid. By such an approach perfect orientation was assured and it was surprising at times to find to what a distance galleries of diseased ethmoidal cells extended outward behind the orbit which would not be removed with safety by the intranasal route. The sphenoidal sinus also could be entered, if necessary, at the same time.

Dr. Garnet Halloran expressed his thanks to Dr. Verge for an extremely interesting and informative paper. He had often been unfavourably impressed with the result of intranasal ethmoidal operations and in consequence felt impelled to look around for a better method of dealing with ethmoid affections. Using the lower part of the incision for the radical frontal sinus operation, he had found the ethmoid readily accessible, but had the advantage of a longer incision than Dr. Verge advocated. He had performed Dr. Verge's operation on the cadaver and had been struck with the ease of this method of approach to the ethmoidal labyrinth and the sphenoid, but he had not operated on patients in this way on account of their objections to the resultant scar.

If the operation were done under block anæsthesia the method of approach might be simplified, the obstruction by hæmorrhage being practically negligible. He would ask Dr. Verge whether he did not think block anæsthesia best for this class of operation.

Dr. R. S. Godsall felt that they were all indebted to Dr. Verge for his paper. Very few men were satisfied with the intranasal route. If by Dr. Verge's procedure the chronic ethmoiditis could be cleared and no unsightly scar left, he considered that the cause of reproach to their Section consequent on frequent intranasal operations would be removed. He had used a similar incision for mucocele of the ethmoid. The operation in his opinion was safe and effective.

When Dr. Verge mentioned working far forward where the frontal nasal duct left the frontal sinus, he had not stressed the danger to the cribriform plate. He wondered at this omission. Sufficient importance had not been made of the value of stereoscopic skiagrams. He had had good views and made this a point in his practice.

The use of peroxide of hydrogen in the nose was in his opinion too harsh and it caused the patient unnecessary pain. With regard to intranasal operations, that performed by Lac was drastic and he would also condemn Sluder's operation.

Referring to general anæsthesia, he thought there was always a certain amount of myocarditis in patients to be operated on for chronic ethmoiditis and he would like to see block anæsthesia more generally used. He felt that it would be possible in Dr. Verge's operation.

Dr. Verge in reply thanked Dr. Kirkland for his comprehensive survey of the subject and for his remarks on his own operation in particular. As regards the size of the incision, he had always found it sufficient for the work to be performed and reminded his hearers that the opening out of the self-retaining retractor gave a much larger amount of space than was conveyed by the idea of an incision three quarters of an inch in length. In reply to Dr. Marks, Dr. Verge said he was glad that Dr. Marks had drawn attention to the occurrence of cells at a distance from the lateral mass of the ethmoid, as he had found the same in quite a number of cases. He did not favour a lower incision on the side of the nose for the reason that it left a larger and more permanent scar. He thought that the selection of the attachment of the middle turbinal as a guide to the highest point of intranasal operation hardly met the case, except for the anterior ethmoid cells, since the posterior ethmoid cells lay above and behind this attachment.

In reply to Dr. Halloran he stated that he had no experience of block anæsthesia in this region. He had been discouraged in the use of local anæsthesia in operating by this means on the antrum some years previously by reason of the amount of shock and mental distress induced for some days afterwards and consequently had not tried it in the operation under discussion, but he thought that under the improved technique of recent years this method might be quite feasible and would certainly assist the surgeon very materially in the reduction of the amount of hæmorrhage.

In reply to Dr. Godsall, he said he took the greatest pains to avoid injury to the cribriform plate and the direction of cutting with the chisel shown in the drawings was designed with this object in view. He had not used stereoscopic skiagrams, but they would be an improvement on the ones he had used and would do so in future.

MEDICO-POLITICAL.

A Meeting of the Tasmanian Branch of the British Medical Association was held at the Royal Society's rooms, Hobart, on September 13, 1927, Dr. F. Fay, the Vice-President, in the chair.

Election of Representatives to the Federal Committee.

Dr. G. Sprott and Dr. E. Brettingham-Moore were elected to represent the Branch on the Federal Committee of the British Medical Association in Australia.

Australasian Association for the Advancement of Science.

Dr. J. Walch, the Representative of the Branch to the Australasian Association for the Advancement of Science, announced that the Association intended to hold its nineteenth meeting at Hobart during the week commencing January 16, 1928. He suggested that some of the well-known medical practitioners who would be present at the meeting, should be approached with the request that they should give a course of lectures in Hobart. It was agreed that steps should be taken to carry this into effect.

Dr. E. A. Rogers suggested that the Branch should give a dinner to the visiting medical practitioners and this was agreed to, provided arrangements could be made with the visitors, if they had sufficient time at their disposal.

Medical Societies.

THE NEWCASTLE HOSPITAL CLINICAL SOCIETY.

A meeting of the Newcastle Hospital Clinical Society was held at the Newcastle Hospital, New South Wales, on August 4, 1927. The meeting took the form of a series of demonstrations by the members of the honorary staff.

A Case for Diagnosis.

Dr. Idris Morgan showed a male patient, aged thirty-nine years, a labourer, who had been admitted to Newcastle Hospital on July 18, 1927, complaining of weakness, a "tight" feeling across the chest, loss of weight and vomiting in the morning for three weeks prior to admission.

There was a history of alcoholism of long duration. His wife had stated that he had been continually intoxicated for some time prior to admission. He had not suffered from any serious illness prior to admission.

Three weeks before admission he had stated that he had felt tired and disinclined for work and the morning vomiting which had occurred occasionally before, had become regular. At that time he had also first noticed the "tight" feeling in the lower part of the chest. A week before admission he had noticed that he had become yellow. On admission he had been jaundiced. An examination of the respiratory system had failed to reveal any abnormality. The apex beat of the heart had been in the fifth space 8·75 centimetres (three and a half inches) from the mid-line. The sounds had been clear and regular. The systolic blood pressure had been 140 millimetres and the diastolic blood pressure 105 millimetres of mercury.

The liver had been uniformly enlarged, the lower border being five centimetres (two inches) below the costal margin. There had been no free fluid in the abdomen and no œdema of the ankles.

The spleen had not been palpable, but the area of splenic dulness had been found to be increased on percussion. On July 29 a fractional test meal had been given and a report had been obtained from the pathologist that there was no free hydrochloric acid in any specimen. Lactic acid was present in half, two and a half and three hour specimens, but was not detected in one, one and a half and two hour specimens. No mucous or bile was present. Starch was present only in the twelve hour sample. The result in the opinion of the pathologist pointed to a gastric carcinoma, although the possibility of pernicious anæmia was still present. Chronic gastritis was also a possibility.

On July 19 the blood had been examined and the following report received:

Red blood cells, per cubic millimetre	3,000,000
Hæmoglobin value	60%
Colour index	1·0
Leucocytes, per cubic millimetre	5,625
Neutrophile cells	67·5%
Small lymphocytes	24·5%
Large lymphocytes	3·5%
Basophile cells	1·5%
Mononuclear cells	3·0%

Some polychromasia and stippling had been seen with some anisocytosis. No nucleated red cells had been seen. The blood had been subjected to the Wassermann test and no reaction had been obtained.

A reaction which was not pronounced, had been obtained by both the direct and indirect methods of the Van den Bergh test. The blood had again been examined on July 30 with the following result:

Red blood cells, per cubic millimetre	3,300,000
Hæmoglobin value	62%
Colour index	0·94
Leucocytes, per cubic millimetre	7,500
Neutrophile cells	70·5%
Small lymphocytes	22·25%
Large lymphocytes	2·25%
Eosinophile cells	1·25%
Basophile cells	0·75%
Large mononuclear cells	3·00%

Some anisocytosis had been seen, but no polychromasia or stippling, no poikilocytosis or nucleated red cells.

On July 31 a bismuth meal had been given and the alimentary canal had been examined by means of X rays. The stomach had been found to empty in normal time. Some dilatation of the stomach and definite gastroptosis had been noted. No evidence of obstruction or ulceration had been seen and no filling defect.

Dr. Morgan stated that when he had first seen the patient a few days after admission to hospital, the jaundice had disappeared, but the skin had exhibited a lemon yellow colour which suggested pernicious anæmia. The result of examination of the blood, although no nucleated red cells were found, had not excluded the possibility of this condition. It was to be noted that the colour index was 1·0. If pernicious anæmia were present, he would expect to find complete achlorhydria. This had been found, but it had also been found associated with the presence of lactic acid in the stomach. MacLean in his monogram on gastric diseases stated that achlorhydria was found in three conditions, namely (i) gastric carcinoma, (ii) pernicious anæmia and (iii) chronic gastritis, but the association of lactic acid and achlorhydria almost certainly pointed to the presence of a gastric carcinoma. The enlargement of the liver, the strong history of alcoholism and the acute onset of the symptoms, however, suggested cirrhosis of the liver.

The jaundice which had been present on admission could have been caused by an inflammatory condition of the duodenal mucosa, probably a part of the chronic alcoholic gastritis which might have accounted for the achlorhydria. If MacLean's statements were to be relied upon, a laparotomy should be performed.

DR. S. S. GARDINER, however, pointed out that a few weeks prior to the discussion lactic acid had been found in the stomach in association with achlorhydria, but no evidence of carcinoma of the stomach had been found at operation.

Dr. Morgan said that he had presented the case for the purpose of obtaining help in arriving at a diagnosis. It appeared from the discussion that the general opinion was that pernicious anæmia could be excluded, but opinion was divided as to whether the condition was one of gastric carcinoma or cirrhosis of the liver.

DR. F. W. D. COLLIER thought that gastric carcinoma could be excluded. A test for occult blood could not be carried out because benzidine was unobtainable.

Madelung's Deformity.

DR. F. W. D. COLLIER showed a girl, aged thirteen years, who was suffering from Madelung's deformity. She had been brought by her mother, because she had noticed a swelling on the back of the left wrist nine months previously. There was no history of accident and the girl complained of weakness and pain in front and behind the lower end of the left ulna. On examination, the patient manifested a subluxation backward of the lower end of the left ulna which was very prominent and could with some little force be reduced. Dorsiflexion was very little limited. The lower ends of radius and ulna were definitely larger than on the other side.

X ray examination revealed a subluxation backwards of ulna and the lower end of radius was slightly curved forwards, so that the lower articular surface looked forwards as well as downwards and the lower ends of radius and ulna were separated by a wide interval. The pain and weakness had disappeared with plaster and splinting, but the deformity remained the same.

It was pointed out that this interesting condition which was also called curved radius or spontaneous subluxation of the ulna, began about the twelfth year and went on increasing for several years. It was most frequent in girls. There was no reliable explanation for the curving of the radius.

Congenital Pronation of the Right Elbow.

Dr. Collier's second patient was a boy of five years, with congenital pronation of the right forearm (rabbit elbow) referred for demonstration by Dr. Ostinga. The mother had noticed that from birth the child could never supinate his right hand. She had four other children, all normal. This child had progressed normally in every other way. The mother had noticed very little disability owing to the deformity. There was no family history of a similar condition.

On examination the boy was free from any other deformities, but the right forearm looked a little shorter than the left. The right forearm could not be supinated. X ray examination revealed a synostosis between the upper end of radius and ulna, the radial head being missing ("headless" type).

A discussion took place as to treatment, but as the child had never had the power of supination and really suffered from little disability, it was felt that operation was unnecessary.

Mikulicz's Disease.

DR. S. S. GARDINER showed a married woman, aged twenty-nine years, who had consulted him twelve days previously. The family history was good. The patient had always enjoyed good health. She gave no history of mis-

carriages and her periods were regular. She had one child living and healthy. Eight weeks previously she had noticed a swelling in both parotid regions, both submaxillary regions and in the region of the lachrymal glands which was also causing the upper lids to project somewhat. She had had no fever and beyond the inconvenience of the swollen glands had suffered no pain. The patient was well nourished, her tonsils were normal and her heart, lungs and spleen were normal. The pupils were active, reacting to light and accommodation and deep reflexes were normal. Her strength was good. The urine was acid, its specific gravity was 1015, it contained neither albumin nor sugar. Microscopic examination revealed no abnormality. The red blood cells numbered 4,600,000 per cubic millimetre and the white blood cells 6,700, the hæmoglobin value was 90%. A week later she had visited Dr. Gardiner with iritis of the left eye and subsequently of the right eye.

The patient had been admitted to hospital for treatment. No reaction had been obtained to the Wassermann test. The iritis had cleared up with appropriate treatment and following the advice of several authorities she had been given large doses of arsenic and three applications of X rays. The glands had practically returned to normal.

Bilateral Renal Calculi.

DR. F. W. D. COLLIER and DR. T. HAMILTON showed a married woman, aged forty years, who had been admitted to hospital on July 29, 1927, complaining of pain in the back and in both sides. The pain sometimes passed down into the groin on either side and had been most noticeable during the previous two days. She had also complained of scalding pain on micturition, of frequency and of having noticed blood in the urine for six days prior to admission. Three weeks previously she had had some bad teeth removed.

Apart from the fact that one of her four children had been still-born there was nothing of interest in the family history.

Physical examination had revealed no abnormal signs except slight tenderness on pressure in the right flank. Examination of the urine had shown that its reaction was acid, its specific gravity 1010. It contained a heavy cloud of albumin and neither sugar nor acetone. All fields had been obscured by red blood cells.

A radiological examination of the kidneys had revealed two calculi at the lower pole of the left kidney, the larger being about one centimetre in diameter and the smaller four millimetres in diameter. The right kidney had manifested a collection of stone or possibly one large one with branches, about five centimetres by 2·5 centimetres in area, at the lower pole.

On August 4, 1927, a cystoscopic examination had been carried out. Indigo-carmine (0·4% solution) had been injected intravenously and had been excreted by the left kidney in seven and a half minutes. The left ureter had appeared healthy with a little blood issuing. The blood issuing from the right ureter would have obscured any appearance of indigo-carmine. A microscopical examination of the urine from each ureter had resulted as follows: Right ureter, two hundred red blood corpuscles per field and fifty pus cells per field; left ureter, two hundred red blood corpuscles per field and twenty pus cells per field.

A double pyelogram had been taken with the aid of ureteric catheterization and the subsequent radiographic pictures showed the pelvis of the left kidney in clear cut normal outline, while that of the right kidney was rather blurred and suggested some disintegration of renal tissue in the area occupied by the stone.

Discussion ensued as to the treatment of the patient, particularly with regard to the side on which nephrolithotomy should be performed first.

Dr. Collier said that Mr. Swift Joly, of Saint Peter's Hospital, London, taught that it was best to operate first on the healthier of the two kidneys, except in the case of pyonephrosis of one kidney.

Dr. Hamilton said that in the case before the meeting it was proposed to operate on the left kidney first, as the left kidney calculi appeared easily approachable through the posterior wall of the renal pelvis. The left kidney could thus be converted into a fairly healthy kidney. After the first operation further renal functional tests would be done and then three weeks later the other kidney would be operated on.

MELBOURNE PÆDIATRIC SOCIETY.

A MEETING OF THE MELBOURNE PÆDIATRIC SOCIETY was held at the Children's Hospital, Carlton, on July 13, 1927, DR. W. W. MCLAREN, the President, in the chair.

Inflamed Meckel's Diverticulum.

MR. J. G. WHITAKER showed a patient, suffering from recurrent hæmorrhages from the bowel, who had been presented by Dr. J. W. Grieve at a previous meeting. Sigmoidoscopic examination had revealed nothing abnormal. Laparotomy had then been performed and an acutely inflamed Meckel's diverticulum removed from a mass of adhesions immediately beneath the umbilical region. After operation the wound had broken down slightly and the skin become excoriated by strongly acid secretions; this had improved rapidly with local applications.

DR. J. W. GRIEVE stated that he was interested to see the improvement which had followed removal of the diverticulum. He asked if the diverticulum had been opened or submitted to histological examination.

DR. H. DOUGLAS STEPHENS said that reports had been published showing that a Meckel's diverticulum frequently contained glands similar to those in the gastric mucosa and it had been suggested that hæmorrhage from such a diverticulum might be analogous to the condition of gastrostaxis. He had no knowledge of any such association between the two conditions.

Mr. Whitaker regretted that he had not obtained a pathological report, but the diverticulum had been acutely inflamed and adherent and had to be removed piecemeal.

Fibrocystic Disease of Bone.

Mr. Whitaker next presented two girls each with a large solitary cyst in the humerus which had been discovered on X ray examination of the bone following injury to the arm.

The first child had suffered from a cyst in the middle of the shaft of the humerus, the bone of which had been considerably thinned, so that a fracture had occurred at this site as a result of very slight violence. The cyst which contained dark brown fluid, had been curetted and a bone graft from the fibula inserted.

The second child had a similar condition at the upper end of the humerus. A fracture had occurred and had united readily, but the cystic condition had progressed. This cyst had simply been opened and curetted and allowed to fill with blood clot. Several X ray plates of each were shown and the ultimate results appeared to be satisfactory.

DR. H. DOUGLAS STEPHENS recalled a child whom he had seen some time previously, with fibrocystic disease involving many bones. At operation the tissue in this patient had been very resilient and almost like rubber in its elasticity.

MR. H. C. COLVILLE stated that with a similar condition occurring in the tibia the question of weight bearing materially altered the convalescence.

Mr. Whitaker considered that with most of these cases the treatment was immaterial, so long as the cyst was curetted and allowed to fill with blood clot. If there was much thinning of the bone then a graft was necessary in addition.

Paraplegia.

DR. J. W. GRIEVE presented a girl, aged eleven years, who had complained of pain in the interscapular region of six weeks' duration. This had continued for three weeks when precipitant micturition and spasticity of the lower limbs were noticed. There was also incontinence of the fæces.

Anæsthesia was present up to the level of the third dorsal segment. There was wasting of the thenar and hypothenar eminences. The lower limbs manifested

exaggerated deep reflexes, extensor plantar responses and "flexor spasms." X ray examination revealed no evidence of a bony lesion.

An injection of "Lipiodol" into the *cisterna magna* was held up at the level of the seventh cervical vertebra. The cerebro-spinal fluid manifested no abnormality and neither the Wassermann nor Casoni tests had yielded a reaction. Dr. Grieve considered the diagnosis to be between intramedullary and extramedullary lesion of the spinal cord. The principal points of interest were that six weeks before admission there was bilateral pain, three weeks later flexor spasms and precipitant micturition and in two days total incapacitation.

DR. H. DOUGLAS STEPHENS said that the commonest causes of a rapidly progressive paraplegia in children were malignant disease, hydatid or tuberculous caries. He suggested a preliminary treatment with large doses of iodides.

MR. C. H. OSBORN considered the diagnosis to lie between hydatid and sarcoma.

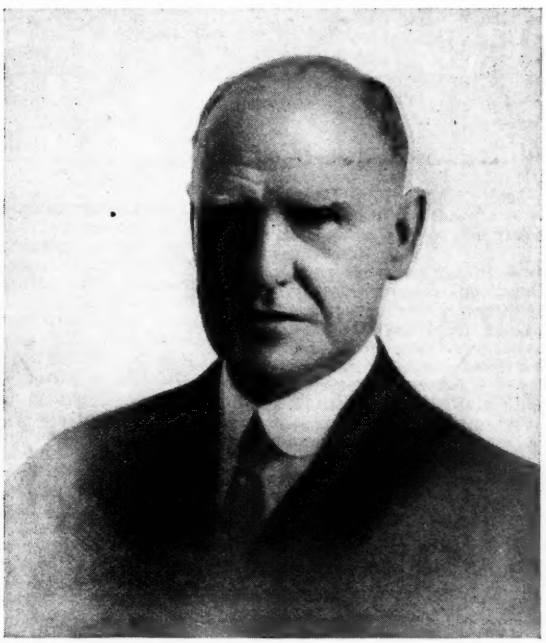
DR. GUY SPRINGTHORPE doubted whether a neoplasm would progress so rapidly and suggested that this was the commonest situation for a hæmatomyelia.

DR. H. LAWRENCE STOKES considered that the onset with root pains indicated an extramedullary lesion. He had seen a similar case in which operation had revealed adhesions involving the spinal cord. Division of these had been followed by complete recovery.

DR. JEAN MACNAMARA regarded the root pains and rapid spread as an indication of possible hydatid disease and recommended early laminectomy.

Diaphragmatic Hernia.

DR. H. DOUGLAS STEPHENS presented an infant who had been shown at a previous meeting, suffering from diaphragmatic hernia. Operation had been performed by the transthoracic route under intratracheal anæsthesia. Seven and a half centimetres (three inches) of the ninth rib on the left side had been resected, the pleura opened and the intestines found immediately, namely free in the pleural cavity. There had been no hernial sac. An opening 4·3 by 5·0 centimetres (one and three-quarters by two inches) had been present in the diaphragm through which had passed the small intestine, appendix and large bowel, but not the stomach. It had at first been difficult to reduce, but then returned rapidly and readily. The opening had been sutured with chromicized catgut after the edges had been rubbed with gauze.



The lung had expanded well and the chest wound had been closed. The child had been very shocked at the end of the operation, but had not vomited since and at the time of demonstration was thriving well. He considered that the condition was probably one of a "universal mesentery" and commented on the risk of another hernia, obstruction or volvulus.

An X ray examination of an opaque meal subsequent to the operation had revealed no intestine in the thoracic cavity.

DR. W. W. MCLAREN congratulated Dr. Stephens on the excellent after result of the operation.

MR. J. G. WHITAKER said he had been greatly impressed by the diagnosis and the excellent exposure obtained by rib resection.

MR. H. C. COLVILLE inquired as to the relative merits of the thoracic and abdominal operations.

Dr. Stephens said in reply that with the abdominal operation reduction was difficult on account of the tendency for the intestines to be sucked back into the thorax and there was much difficulty in suturing the diaphragm. With the combined abdominal and thoracic operation the mortality was very high. In the thoracic method reduction was easy once it commenced and closure of the diaphragm was easy.

Obituary.

ANDREW STEWART.

IN our issue of August 27, 1927, we announced the death of Andrew Stewart, of Brisbane, which took place on August 18. He had been in indifferent health for some months, but few of his acquaintances and friends recognized that his indisposition was serious. He was sixty-seven years of age, having been born on April 29, 1860. Dr. A. Jefferis Turner has kindly written a note which we publish below. Although we have been unable to gather information concerning his career prior to his arrival in Australia in 1894, his popularity both in Queensland and in other States of Australia, his reputation as a learned and skilled physician and his delightful personality indicate that his good qualities must have been established at an early age. This journal has been under many obligations to Andrew Stewart for work done willingly and with the ability of a master. His death is a blow to his patients, to his colleagues and this journal.

DR. JEFFERIS TURNER writes:

By the death of Dr. Andrew Stewart last month the medical profession in Brisbane has lost a unique personality. A graduate of Glasgow University in 1883, he practised for some years in Brazil, coming later on to Queensland where he registered in 1894. For many years he laboured as a hard-working general practitioner in Dalby, where he performed single-handed one of the earliest Cæsarean sections in this State. But his true bent was that of a physician and his opportunity came when the Government Sanatorium was opened within a few miles of Dalby. There, for a very small salary but with much enthusiasm, he did a large amount of first-class clinical work, some of which has been recorded from time to time in the pages of this journal. For many years he was the only physician in this State practising artificial pneumothorax, a mode of treatment still sadly neglected here, but one which in suitably selected cases gives occasionally brilliant results, transforming otherwise hopeless patients into full workers with apparently a normal expectancy of life.

Coming to Brisbane late in life, he was appointed Government Tuberculosis Officer, but was disappointed at being unable to establish a tuberculosis clinic. He had

the Highland temperament and in his frequent attendances at our Branch meetings said everything he thought—and perhaps sometimes a little more than he thought—quite regardless of consequences, but never with the least touch of malice. He possessed the affectionate regard of those few who knew him well, and by them he will be much and sadly missed.

Correspondence.

STANDARDS FOR INFANTS' FOODS.

Sir: Several points in your leading article of September 3, 1927, call for comment, otherwise that much misunderstood individual "the mere health official" is liable to still further misunderstanding.

You very rightly point out the great variation found in the constituents of human milk, but you somewhat unkindly suggest that the facts of this variability ascertained by Dr. Halcro Wardlaw and Professor H. G. Chapman "have been ignored by some of the departmental authorities."

With all due respect I would point out that this information, not necessarily ignored, increases the difficulty of formulating a standard for infants' foods.

Your article is an excellent example of destructive criticism and its only constructive idea is one which implies that there should be no standard for infants' foods at all.

You contend that "certain artificial foods whose protein and fat contents are materially lower than the arbitrary formula values, have proved to be life-saving at times."

The same may be said of barley-water, whey, condensed milk, baked flour *et cetera*, but does this justify these and similar commodities being classed as infants' foods?

If the justification of an infants' food is the fact that it is on the market as such, what is to prevent, in the absence of a standard, the testing of an unsuitable food at the expense of the public or rather of the infants of the community?

If a food proves satisfactory, so much to the good; if unsatisfactory, it may go off the market, but are we to ignore the fatalities produced in the process of its elimination?

To determine what may be regarded as a suitable standard for infants' food constitutes a great problem and no one more than the maligned health authority is cognizant of its many difficulties and pitfalls.

There is no desire to tell "the clinician what is an acceptable food for an infant," nor is there a desire to compel withdrawal from the market of one single food which has established its right to be there.

If infants' foods were always administered under the supervision of a clinician, there would perhaps be no need for action, but since the foods given to the great majority of artificially-fed infants are chosen for them by their mothers alone, the need for protection is evident.

The public judgement of the suitability of any infants' food varies in direct ratio with the intensity of the propaganda and advertisement in connexion therewith.

The very fact that there are so many foods each differing from the other in one or more directions may appear at first glance to make the formulation of a standard undesirable even if practicable.

Nevertheless there must be some rational standard to which such foods should comply and the efforts which have been and are being made to this end, are actuated by motives of the highest public interest.

That all conflicting interests cannot be harmonized is an indication of the complexity of the problem and I venture to think that if you, Sir, appreciated all the facts in the possession of any State Health Department, you would not be so dogmatic in your statement nor so virulent in your criticism of such departments.

Yours, etc.,

E. Sydney Morris,

Office of the Director-General of Public Health,
Sydney, September 20, 1927.

Sir: As one of the "departmental persons" concerned, may I be allowed to comment upon your leading article upon the artificial feeding of infants in the journal of September 3, 1927.

The members of the recent conference were well aware of the great variations found in the composition of human milk as found on analysis and aware also of the great difficulty of obtaining representative samples, a difficulty which is probably responsible for much of the apparent variation in fat content.

It is obviously desirable that further research should be carried out in order to determine the average composition of human milk both in Australia as a whole and in various parts of the Continent. This need is illustrated by the fact that whereas the investigation quoted in your article showed an average protein content of 1·7%, a value which is, as you say, 13·3% above the "departmental average," yet in the supplement of the same date Dr. Jefferis Turner quotes a more recent investigation by Dr. Wardlaw and Dr. Dart, in which the average protein content was found to be 1·41%. I will not trouble to work out by how much *per cent.* this figure falls below 1·5, but I do suggest that the conference was justified in adhering in the meantime to the average composition which is commonly accepted.

It seems necessary to point out that the Conference had no desire at all to limit or dictate to the clinician as regards the dietary he should prescribe in his practice. The suggested regulations are designed to control foods sold, advertised and likely to be used by mothers without any medical or specially skilled advice. Would any clinician approve of the indiscriminate use of an infants' food which contained less than 2·1% of fat? Admittedly an excessive proportion of fat would be equally or even more undesirable, but none of the advertised proprietary foods considered by the Conference erred in that direction and so it seemed unnecessary to fix a maximum. Your article states that the fat of human milk is biologically distinct

from the fat of cow's milk. That may be so—I would not be too sure—but you are wrong in charging the Conference with an endeavour to prescribe a fixed percentage of fat in infants' food. The figure 2·1 is prescribed as a minimum only and for the purpose of eliminating certain foods, the calorific value of which appeared too low for general use.

In regard to the "inexorable demand" for 4% of lactose—here I would agree that sugar of milk is biologically distinct from cane sugar, for example. In this case, however, you make no reference to biological distinction. The requirement in regard to 4% of lactose was suggested with due regard to Nature as an authority on infant feeding and mainly, I believe, with the idea of insuring that the basis, at least, of infants' foods should be milk. Surely every clinician would agree as to this desirability?

I am surprised at your slighting reference to the personnel of the conference, whose duties, you say, do not include the treatment of healthy or weakly babies. I submit that the medical officers of the State Health Departments are more closely concerned with the feeding of healthy babies than any other branch or group of the profession and whilst I am conscious of many gaps in my own knowledge, I believe that my colleagues were both well informed and keenly interested in regard to the matter.

I admit that the regulations now suggested are not ideal; they represent, however, an advance upon those hitherto in force and I trust that they will be adopted.

Yours, etc.,

JOHN DALE,
Medical Officer of Health.

Town Hall, Melbourne,
September 19, 1927.

[Dr. Sydney Morris bases his arguments on premisses which appear to us to be unsound. They are that the tacit recognition of foods differing essentially from mother's milk in composition would be responsible for many fatalities among infants, that these fatalities would be prevented by the prohibition of the sale as infants' foods of all preparations which do not conform with some arbitrary formula and that a formula has been found that would not necessitate the withdrawal from the market of any food that has established its right to be there. Artificial feeding of infants is admittedly unsatisfactory, but those who have had large experience, realize that much more harm is inflicted on babies by irresponsible and illogical methods of feeding than by variations of the proportions of carbohydrate, fat and proteins in foods deliberately prepared for infants. Mothers who give their babies beer and biscuits, are unlikely to be influenced by the regulations of the Health Departments in regard to the labelling of infants' foods. There is evidence of the harm done by foolish feeding. But is there any evidence of fatality resulting from any of the well-known brands of infants' foods which have been on the world's markets for many years? We hold no brief for any one of these foods and do not contend that any one of them is suitable for every infant deprived of its natural food. But we do contend that mothers should not be influenced against a trial of these foods when clean cow's milk is not available or when it does not seem to agree with the infant. Artificial feeding must to some extent be based on the plan of trial and error. A careful mother will stop an unsuitable food long before it has done irreparable harm. The Federal Executive Committee found a satisfactory solution of the problem. Dr. Morris and Dr. Dale admit the difficulty in devising an ideal standard. Although it may be destructive criticism to object to any standard, we claim that the health departments would be serving the people better if they insisted on the publication on the label of the ingredients of all foods sold as infants' foods and if they prohibited the sale of those foods that were not true to label as well as those whose ingredients were impure or of bad quality. It must be remembered that the standards devised up to the present do exclude the majority of the recognized foods and many of the standards would have the effect of giving certain dried milk preparations a monopoly. The recognized foods have been constructed on the advice and guidance of physiologists and clinicians and we claim that the manufacturers have performed valuable service to the public in placing these preparations on the market. Moreover, it must be pointed out that the cow's milk offered for sale throughout Australia is rarely clean or satisfactory as a food for infants.—EDITOR.]

THE GYNÆCOLOGIST AND THE PSYCHIATRIST IN COLLABORATION.

SIR: Dr. H. M. North suggests that consultation between gynæcologist and psychiatrist would lessen the number of female abdomens on which the surgeon has left the mark of his handicraft, and here is a case in point. A woman of good social position, two years a widow, had reason to fear that she was pregnant by a married man. She was not pregnant and menstruated regularly. At the end of the supposed term having failed to bring forth a child, she changed the pregnancy delusion into a vague abdominal pain and urged an exploratory operation. X ray examination was negative and not convincing to the patient. Sir Alexander MacCormick agreed with my view and as the patient declined any treatment other than operative, she consulted a gynæcologist. Later she wrote to me a little triumphantly, telling me that she was over her operation. I think Dr. North is right.

Yours, etc.,

K. ST. V. WELCH.

235 Macquarie Street, Sydney.
September 16, 1927.

REFERENCES TO MEDICAL LITERATURE.

SIR: In your timely leader on this subject you mention that "in Europe there are at all times medical journalists willing to undertake translations of this kind for a reasonable fee."

That the same facilities exist in Australia is evidenced by the fact that a few months back there appeared in the Journal two advertisements, one from myself offering to do translations from Italian, Spanish and French and a second from another source covering German, Polish and Russian. I did not receive a single reply; what the other advertiser's experience was I do not know.

Those medical writers whom you rightly blame for giving inaccurate references to foreign literature, cannot therefore advance the plea that translations are not available in this country.

Yours, etc.,

E.J.H.

Undated.

EXAMINATIONS FOR INSURANCE.

SIR: One of the most annoying trials of medical practice is to have a candidate for life insurance present himself for examination during a busy consulting hour with a waiting-room full of patients, some of them very impatient. Most time is lost in trying to excavate the family history from the depths of the candidate's memory. I wish to suggest that a request be made by the Association to the various companies to instruct their agents to supply candidates with a printed copy of the questions in the Personal Statement dealing with family history and ask them to have the answers ready when they go to the doctor for examination. I believe this would save ten or fifteen minutes of valuable time now often taken up by the candidate's painful efforts to recall what his father died of or how many brothers and sisters he has.

Yours, etc.,

Undated. E.J.H.

DIATHERMY.

SIR: May I claim space in your journal to give your readers the assurance that diathermy is safer to use, so far as electric shock is concerned, than ordinary electrical appliances.

The recent case of a doctor who was electrocuted when using diathermic apparatus, is a particularly sad one, having regard to the fact that with the best makes of machine the possibility of such an occurrence is very remote.

The following points will interest many hundreds of users:

1. There is no metallic contact between the mains and the high frequency terminals.

2. High frequency currents do not give electric shocks. The faradic sensation is not felt about 100,000 cycles per second and in the case of diathermic apparatus the periodicity is usually from 500,000 to 1,500,000.

3. Many operations are performed daily, as in cystoscopic work under conditions in which the patient and operator are earthed.

In the case of ordinary electrical appliances such as electric irons and other domestic equipment the greatest care should be taken to avoid handling when the user is "earthed." In the case of properly designed diathermic equipment only the lead in wires should give electrical sensation, the secondary connexions which are applied to the patient should not give electrical sensation. The avoidance of earth connexion is a very good habit to cultivate when using any electrical contrivance and apart from the cultivation of such a habit as a principle it would be regrettable if users of apparatus became timid when using an appliance which in the ordinary course is safer than domestic appliances in common use.

Yours, etc.,

L. E. Burt.

96, Grassmere Road,
Cremorne, New South Wales,
September 9, 1927.

Books Received.

THE INJECTION TREATMENT OF VARICOSE VEINS, by A. Douthwaite, M.D., M.R.C.P. (London); 1927. London: H. K. Lewis and Company, Limited. Crown 8vo., pp. 47. Price: 3s. net.

ENVIRONMENT AND RACE: A STUDY OF THE EVOLUTION, MIGRATION, SETTLEMENT AND STATUS OF THE RACES OF MAN, by Griffith Taylor, D.Sc., B.E. (Mining), B.A. (Cantab.), F.R.C.S.; 1927. Oxford University Press. Royal 8vo., pp. 356, with illustrations. Price: 21s. net.

Diary for the Month.

Oct. 4.—New South Wales Branch, B.M.A.: Council (Quarterly).
Oct. 4.—Tasmanian Branch, B.M.A.: Council.
Oct. 5.—Victorian Branch, B.M.A.: Branch.
Oct. 5.—Western Australian Branch, B.M.A.: Council.
Oct. 6.—South Australian Branch, B.M.A.: Council.
Oct. 7.—Queensland Branch, B.M.A.: Branch.
Oct. 7.—New South Wales Branch, B.M.A.: Delegates of Local Associations Meet Council (First Day).
Oct. 8.—New South Wales Branch, B.M.A.: Delegates of Local Associations Meet Council (Second Day).
Oct. 11.—Tasmanian Branch, B.M.A.: Branch.
Oct. 11.—New South Wales Branch, B.M.A.: Ethics Committee.
Oct. 12.—Central Northern Medical Association, New South Wales.
Oct. 13.—Victorian Branch, B.M.A.: Council.
Oct. 13.—New South Wales Branch, B.M.A.: Clinical Meeting.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xx.

Saint Vincent's Hospital, Melbourne: Medical Vacancies.

Medical Appointments: Important Notice.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
New South Wales: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
Victorian: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
Queensland: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Members accepting appointments as medical officers of country hospitals in Queensland are advised to submit a copy of their agreement to the Council before signing. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
South Australian: Secretary, 207, North Terrace, Adelaide.	All Contract Practice Appointments in South Australia. Booleroo Centre Medical Club.
Western Australian: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
New Zealand (Wellington Division): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Medical practitioners are requested not to apply for appointments to positions at the Hobart General Hospital, Tasmania, without first having communicated with the Editor of The Medical Journal of Australia, The Printing House, Seamer Street, Glebe, New South Wales.

Editorial Notices.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to The Medical Journal of Australia alone, unless the contrary be stated.

All communications should be addressed to "The Editor," The Medical Journal of Australia, The Printing House, Seamer Street, Glebe, Sydney. (Telephones: MW 2651-2.)

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